DOCUMENT RESUME

ED 195 766 CE 027 412

TITLE	Agriculture Supplies & Services. Volume 2 of 3.
INSTITUTION	Kansas State Univ., Manhattan.
SPONS AGENCY	Kansas State Dept. of Education, Topeka.
PUB DATE	[79]
NOTE	656p.: For related documents see CE 027 411-413.
EDRS PRICE	MF03/PC27 Plus Postage.
DESCRIPTORS	Agribusiness: *Agricultural Education; Agricultural Supplies: *Agricultural Supply Occupations; Animal Husbandry: *Career Choice: Cooperative Education; Curriculum Guides: Farm Management; Instructional Materials: Learning Activities: *Livestock; Secondary Education: Service Occupations: *Supervised Farm Practice: *Vocational Education: Work Experience Programs

ABSTRACT

The second of three volumes included in a secondary agricultural supplies and services curriculum guide, this volume contains units of instruction in three major areas: (1) Animal Science, (2) Supervised Training Programs--Farm Business Management, and (3) Career Selection/Public Relations. Typical of the sixteen units included in the first section are the following: Livestock Feeding, Maintaining Animal Health, Breeds of Livestock, Fundamentals of Animal Genetics, Market Grades and Classes of Livestock, Reproductive Organs of Farm Animals, Composition and Classification of Feeds, and Animal Digestion. Among the six units included in section 2 are Business Procedures and Records, Supervised On-Job Experience Programs for Agribusiness, Insurance, and Agricultural Supply and Service Business Organizations. The final portion of Volume 2 contains the following 6 units: Salesmanship, Displaying and Advertising, Careers in Agriculture, Human Relations, Career Selection, and Customer Relations. Each unit follows a typical format which includes terminal objectives, specific objectives, suggested activities, instructional materials, references, information sheets, transparency masters, assignment sheets, tests, and test answers. (LRA)

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AGRICULTURE

SUPPLIES & SERVICES

VOLUME 2 OF 3

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
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TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

ANIMAL SCIENCE

1. Livestock Feeding
2. The Livestock Industry
3. Maintaining Animal Health
4. Parasites (Animal)
5. Breeds of Livestock
6. Livestock Selection
7. Fundamentals of Animal Genetics
8. Livestock Price Trends and Cycles
9. Market Grades and Classes of Livestock
10. Marketing Livestock and Market Agencies
11. Reproductive Organs of Farm Animals
12. Animal Nutrients
13. Composition and Classification of Feeds
14. Diseases (Animal)
15. Animal Digestion
16. Manufacturing Feeds in the Feed Mill

SUPERVISED TRAINING PROGRAMS - FARM BUSINESS MANAGEMENT

1. Business Procedures and Records
2. Supervised On-Job Experience Programs for Agribusiness
3. Analysis and Evaluation of the On-Job Experience Program in Agribusiness
4. Planning and Implementing Supervised On-Job Experience Programs for Ag. Bus.
5. Insurance
6. Agricultural Supply and Serivce Business Organizations

CAREER SELECTION/PUBLIC RELATIONS

1. Salesmanship
2. Displaying and Advertising
3. Careers in Agriculture
4. Human Relations
5. Career Selection
6. Customer Relations

ANIMAL SCIENCE

LIVESTOCK FEEDING
UNIT IV

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to define terms associated with livestock feeding, identify the characteristics of feedstuffs, and plan feeding programs for different classes of livestock. He should also be able to balance rations for the different classes using various methods. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with livestock feeding to the correct definition.
2. Name the approximate percentage of composition of farm animals.
3. Match functions of a simple digestive system with the correct part of the system.
4. List four main parts of the ruminant stomach.
5. List six classes of nutrients.
6. List functions of water in the animal body.
7. Name five purposes of a ration.
8. Select from a list the characteristics of a good ration.
9. List the characteristics of major grains used as feedstuffs.
10. List the composition of a good ration.
11. Name two thumb rules for feeding livestock.
12. Balance a rations for protein content using the square method.

LIVESTOCK FEEDING
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

A. Provide students with objective sheet.

B. Provide students with information and assignment sheets.

C. Make transparencies.

D. Discuss terminal and specific objectives.

E. Discuss information and assignment sheets.

F. Give test.

(NOTE: Instructors may want to secure feed tags of various feeds for students to analyze.)

II. Student:

A. Read objectives.

B. Study information sheet and take notes.

C. Complete assignment sheet.

D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

A. Objectives

B. Information sheet

C. Transparency masters

1. TM 1 - Composition of Farm Animals
2. TM 2 - Parts of a Simple Digestive System
3. TM 3 - Parts of a Ruminant Digestive System

D. Assignment sheet

1. Assignment Sheet #1 - Balance a Ration Using the Pearson Square Method

E. Answers to assignment sheet

F. Test

G. Answers to test

II. References:

A. Animal Science. Columbia, Missouri: Missouri State Department of Education, Agricultural Education, University of Missouri.

B. Ensminger, M.E. The Stockman's Handbook. Danville, Illinois: Interstate Printers and Publishers, 1962.

C. Bundy, C.E. and Ronald V. Diggins. Livestock and Poultry Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1961.

D. Morrison, Frank B. Feeds and Feeding. Clinton, Iowa: The Morrison Publishing Co., 1959.

E. Cassard, Daniel W. and Elwood M. Juergenson. Approved Practices in Feeds and Feeding. Danville, Illinois: Interstate Printers and Publishers, 1963.

F. General Facts on Livestock Feeding. Urbana, Illinois: College of Agriculture, Vocational Agriculture Science. University of Illinois.

G. Richardson, Curtis W. OSU Extension Facts. "Feeding Dairy Replacement Heifers." Stillwater, Oklahoma: Oklahoma State University.

H. Stevens, Vernon, William G. Luce, and Don R. Gill. OSU Extension Facts, "Swine Nutrition." Stillwater, Oklahoma: University of Oklahoma.

I. Luce, William G. OSU Extension Facts, "Managing the Sow and Litter," Stillwater, Oklahoma: Oklahoma State University.

J. Allen, Dell M.; Hines, Robert H.; McKee, Miles. AS & I Lab Manual, Kansas State University, 1971.

K. Selecting Cattle Feed to Reduce Costs, Cooperative Extension Service, Kansas State University, Manhattan, KS 66506. SB-575.

L. Alfalfa for Economical Dairy Rations, Cooperative Extension Service, Kansas State University, Manhattan, KS 66506. XL-375.

M. Beef Cattle Feed Requirements, Cooperative Extension Service, Kansas State Univeristy, Manhattan, KS 66506. VMF-264.

LIVESTOCK FEEDING
UNIT IV

INFORMATION SHEET

I. Terms and definitions

- A. Ration - Feed necessary for a given animal for 24 hours
- B. Balanced ration - Ration which supplies all the necessary nutrients in proper proportions for a period of 24 hours
- C. Nutrient - Single class of food that aids in support of life
- D. Digestible nutrient - That portion of a nutrient which may be digested and absorbed by the animal
- E. Digestion - Process which breaks down food before absorption into the body
- F. Mastication - Chewing of food by an animal
- G. Concentrate - Feed high in total digestible nutrients and low in fiber

  Example: At least 75% TDN and not more than 15% fiber
- H. Roughage - Feed high in fiber and low in total digestible nutrients
- I. Ruminant - Animal that has more than one compartment in his stomach
- J. Simple stomach animal - One that has only one stomach
- K. Crude protein - Nitrogen containing compounds in feed
- L. Digestible protein - Amount of crude protein in a feed that can be digested by the animal

  (NOTE: As a general rule digestible protein is about 80% of crude protein.)
- M. Absorption - Passing of food materials from digestive tract into the body after they are digested and dissolved
- N. Bloom - Healthy appearance indicating that the animal is doing well on feed
- O. Feces - Waste material of animals (manure)
- P. Protein - Nutrient which supplies materials for body growth
- Q. Palatable feed - A feed that is tasty to animals
- R. Amino acids - Building blocks of protein
- S. Total digestible nutrients - Proportion of a feed which is usable to supply energy to the animal
- T. Fiber - Tough part of feed which is not very digestible

II. Composition of farm animals (Transparency 1)

III. Parts and functions of a simple digestive system (Transparency 2)
   A. Mouth
      1. Chewing
      2. Secretion of saliva
   B. Esophagus - Passageway to stomach
   C. Stomach
      1. Hydrochloric acid added
      2. Absorption begins
   D. Small intestine
      1. Enzymes added
      2. Pancreatic juices added
   E. Large intestine - Water absorbed
   F. Anus - Passageway to expel waste

IV. Major parts of the ruminant stomach (Transparency 3)
   (NOTE: Cattle, sheep, and goats are ruminants.)
   A. Rumen (paunch)
      1. Holding vat
      2. Starts bacterial breakdown
   B. Reticulum (known as hardware stomach)
      1. Forepart of rumen
      2. Acts as a filter to keep large particles of feed from passing from rumen
   C. Omasum
      1. Grinds feed
      2. Squeezes out water
   D. Abomasum (true stomach)
      1. Adds digestive juices
      2. Functions similar to simple stomach

V. Classes of nutrients
   A. Carbohydrates
      Examples: 1. Corn
      2. Oats
      3. Barley
      4. Milo
      5. Wheat

VIII. Characteristics of a good ration
    A. Available
    B. Economical
    C. Palatable
    D. Causes no harmful effects
    E. Contains proper proportion of roughage and concentrates
    F. Provides essential amino acids, vitamins, and minerals

(NOTE: Swine rations must contain all the essential amino acids. However, ruminants can manufacture many of the essential amino acids used in the animal body.)

IX. Characteristics of major grains used as feedstuffs
    A. Corn
        1. 80% total digestible nutrients (TDN)
        2. High in fat
        3. Yellow or white in color
        4. Deficient in protein and mineral
    B. Oats
        1. 70% TDN
        2. Low quality feed
        3. Low in protein
        4. High fiber content in hulls
    C. Barley
        1. Good corn substitute
        2. High in carbohydrates
    D. Wheat
        1. High in TDN
        2. High in protein
    E. Rye
        1. Less palatable to livestock
        2. Mixes with other feeds
    F. Milo and grain sorghums
        1. 70% TDN
        2. Low quality protein

X. Composition of a good ration
    A. Concentrate and roughage

B. Protein in sufficient amount and quality

C. Minerals in proper amounts

D. Vitamins in proper amounts

XI. Thumb rules in feeding livestock

- A. Swine
  - 1. Nursing sows - Three pounds of grain per 100 pounds of live weight per day
  - 2. Fattening - Four pounds of grain supplement per 100 pounds of live weight per day
  - 3. 350 pounds of grain and supplement to produce 100 pounds of live weight
- B. Dairy
  - 1. Cows (in production)
    - a. Two pounds of roughage per 100 pounds of live weight
    - b. One pound of hay and three pounds of silage per 100 pounds of live weight
    - c. One pound of concentrate per day for each three to four pounds of milk produced
  - 2. Cows (dry)
    - a. Good condition - Two to four pounds of concentrates and good roughage
    - b. Poor condition - Five to six pounds of concentrates and good roughage
- C. Beef
  - 1. Winter feeding cows on grass pasture
    - a. Five to seven pounds of good quality alfalfa hay
    - b. Two pounds of 41% protein supplement
    - c. Four pounds of 20% protein supplement
    - d. Three pounds of 32% protein supplement
  - 2. Conventional creep ration

a.	Sixty pounds of cracked or rolled milo or corn	5.6% P
b.	Thirty pounds of whole oats	3.6% P
c.	Ten pounds of cottonseed meal	4.1% P
	Total	13.3% P

- D. Sheep
  - 1. Ewes
    - a. With winter pasture - One pound of grain, one pound of dry hay

b. Without winter pasture - One pound of grain, three pounds of dry hay

2. Rams

a. With dry grass pasture - Two pounds of alfalfa hay

b. One pound of grain daily

XII. Balancing a ration using the square method

A. Draw a square with diagonal dotted lines

B. Place the desired protein level of the ration in the center of the square

C. Place the percentage protein on the two feeds being used at the top and bottom left corners

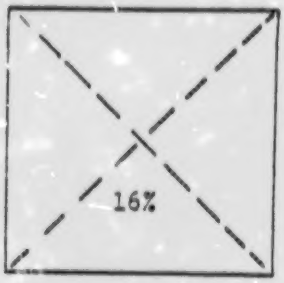
D. Subtract following the dotted lines

E. Look for the results, directly across the square, which indicate the number of parts of each feed needed in the ration to balance it

F. Total the parts of feed needed

G. Divide total parts into grain and protein parts to get the respective percentage of each

Example:



	Pearson's Square	Parts	Percentage
soybean meal 44%		4.7 protein supplement	14% protein supplement
milo 11.3%		28 parts of home grown feed	86% milo
	Total	32.7 total parts	100% ration

(NOTE: Do Assignment Sheet #1)

Sample rations:

A. Swine

1. 18% ration

Ingredients		Pounds
Corn		600
Milo		600
Oats		120
Soybean meal (44%)		488
Whey		200
Thylan		5
	Total	2,013

2. 16% ration

Ingredients		Pounds
Corn		650
Milo		650
Oats		120
Soybean meal		388
Whey		200
Tylan (20 gram level)		5
	Total	2,013

3. 18% baby pig ration

Ingredients		Pounds
Corn		600
Milo		600
Oats		120
Soybean meal (44%)		488
Whey		200
Tylan		5
Sugar	Total	2,213

(NOTE: The above rations were made available by Mr. Jim Rucker, Vocational Agriculture instructor, Moore, Oklahoma.)

4. Sow ration

Ingredients		Pounds
Milo (ground)		1,565
Soybean meal (44%)		280
Alfalfa meal		100
Di-calcium phosphate		30
Calcium carbonate		15
Salt (iodized)		10
Vitamins (Premix according to manufacturer's recommendation)	Total	2,000

5. Confinement ration

a. 17.5% protein mix

Ingredients	Pounds
Wheat	1,111.5
Milo	1,111.5
Soybean meal (44%)	634.5
Molasses	45.0
Di-calcium (hi-quality)	33.0
Limestone (hi-quality)	31.5
Salt (trace minerals)	15.0
(Premix according to manufacturer's recommendation)	
Total	2,981.0

(NOTE: Feed until pigs weigh 75-80 lbs. Use for pigs weighing less than 55 lbs.)

b. 16% protein mix

Ingredients	Pounds
Wheat	1,141.5
Milo	1,141.5
Soybean meal (44%)	574.5
Di-calcium (hi-quality)	33.0
Limestone (hi-quality)	31.5
Salt (trace minerals)	15.0
Molasses	45.0
(Premix according to manufacturer's recommendation)	
Total	2,982.0

(NOTE: This ration may be used following the 17.5% ration. This ration is suggested to start pigs on when weighing 55-69 lbs. Feed unitl pigs weigh 125 lbs.)

c. 15% protein mix

Ingredients	Pounds
Wheat	1,201.5
Milo	1,201.5
Soybean meal	454.5
Molasses	45.0
Di-calcium (hi-quality)	33.0
Limestone (hi-quality)	31.0
Salt (trace minerals)	15.0
(Premix according to manufacturer's recommendation)	

Total 2,981.5

(NOTE: Start feeding when pigs weigh 80 lbs., and feed until pigs weigh 175-180 lbs.)

d. 13.5% protein mix

Ingredients	Pounds
Wheat	1,231.5
Milo	1,231.5
Soybean meal(44%)	394.5
Molasses	45.0
Di-calcium (hi-quality)	33.0
Limestone	31.0
Salt (trace minerals)	15.0
(Premix according to manufacturer's recommendation)	
Total	2,982.0

(NOTE: This ration may be used to finish hogs from 180 lbs. to 220 lbs.)

(NOTE: The above rations on confinement feeding of swine were made available by Mr. Cleo Collins, District Supervisor, Vocational Agriculture.)

B. Beef

1. Growing ration for calves weighing

	350-450 lbs.	450-550 lbs.	550-650 lbs.
Ingredients	Pounds	Pounds	Pounds
Corn silage	1,450	1,515	1,555
Milo (steam flaked)	340	320	315
Dehydrated alfalfa	85	65	50
40% supplement	125	100	80
Total	2,000	2,000	2,000
Approximate daily consumption	24 lbs.	31 lbs.	38 lbs.

2. Fattening rations (high in milo)

Ingredients	Pounds	Pounds	Pounds
Corn silage	1,030	725	290
Dehydrated alfalfa	60	70	65
Rice hulls	65	75	110
Fat	-	20	40
Milo (steam flaked)	450	603	837
Corn (steam flaked)	300	402	558
40% supplement	95	105	100
Total	2,000	2,000	2,000

Concentrates	65%	75%	87%
Approximate daily consumption	32 lbs.	28 lbs.	30 lbs.
Days on each ration	10	10	Balance of feeding period

3. Fattening ration (high in corn)

Ingredients	Pounds	Pounds	Pounds
Corn silage	1,030	725	290
Dehydrated alfalfa	60	70	65
Rice hulls	65	75	110
Fat	-	20	40
Corn (steam flaked)	450	603	837
Milo (steam flaked)	300	402	558
40% supplement	95	105	100
Total	2,000	2,000	2,000

Concentrates	65%	75%	87%
Approximate daily consumption	32 lbs.	28 lbs.	30 lbs.
Days on each ration	10	10	Balance of feeding period

(NOTE: Beef feeding rations were made available to us by the Texas County Feed Yard, Guymon, Oklahoma.)

4. Show calf ration

Ingredients	Pounds
Oats or bran	1,000
Barley (crimped)	500
Maize (crimped)	500
Wheat or corn	500
Cottonseed meal	100
Soybean meal	50
Linseed meal	50
Molasses	150
Total	2,850

(Feed additives should be used according to manufacturer's recommendation.)

(NOTE: This ration was made available by Mr. Benton Thomason, Young Farmer Coordinator, Northwest Area Vocational-Technical School, Alva.)

D. Sheep

1. Creep ration

Ingredients	Pounds
Corn or sorghum	400
Barley	400
Molasses	200
Cottonseed meal (41%)	200
Legume hay	800
Total	2,000

2. Show ration

Ingredients	Pounds
Corn (cracked)	1,000
Oats (rolled)	800
Wheat bran	200
Cottonseed meal	200
Total	2,000

3. Mature sheep ration

Ingredients	Pounds
Oats (rolled)	1,000
Barley (rolled)	800
Wheat bran	200
Total	2,000

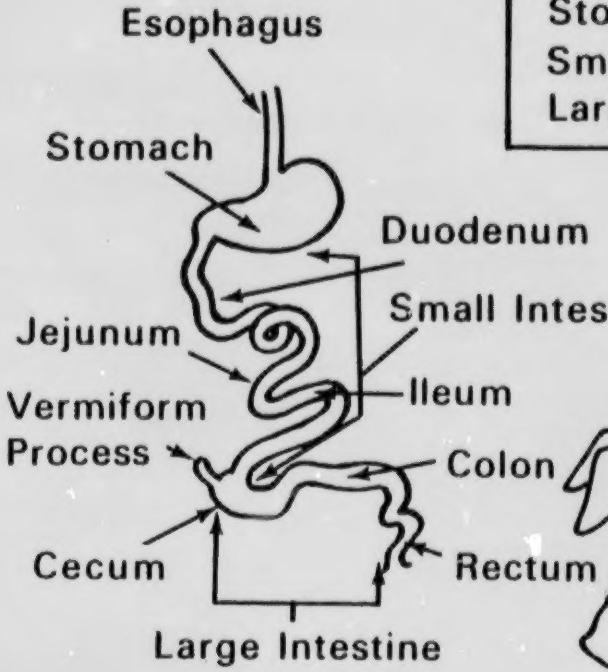
(NOTE: Add a good quality roughage to above grain rations. Salt and other minerals should be provided on a free choice basis.)

Composition of Farm Animals

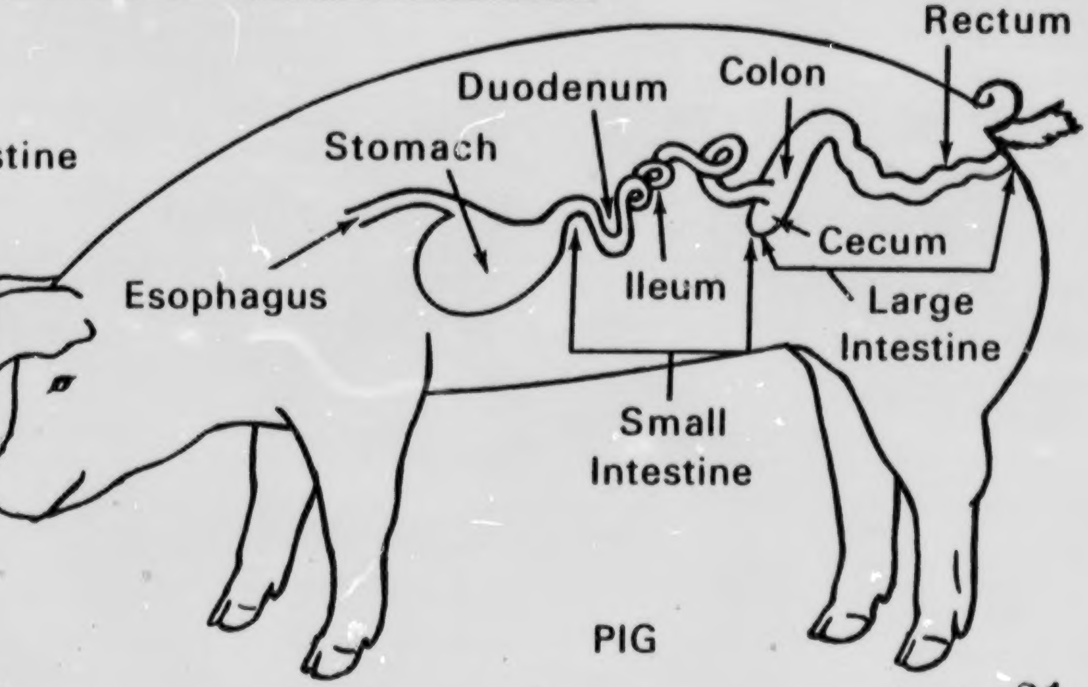
ANIMALS	WATER	PROTEIN	FAT	MINERAL MATTER
Slaughter Steer	50%	16%	30%	4%
Slaughter Sheep	61%	16%	20%	3%
Slaughter Hog	50%	14%	28%	8%
Dairy (aged cow)	59%	18%	18%	5%

Parts of A Simple Digestive System

APPROXIMATE CAPACITIES	MAN	PIG
Stomach	¼ ga.	2 gal.
Small Intestine	½ "	2 "
Large Intestine	½ "	2 "

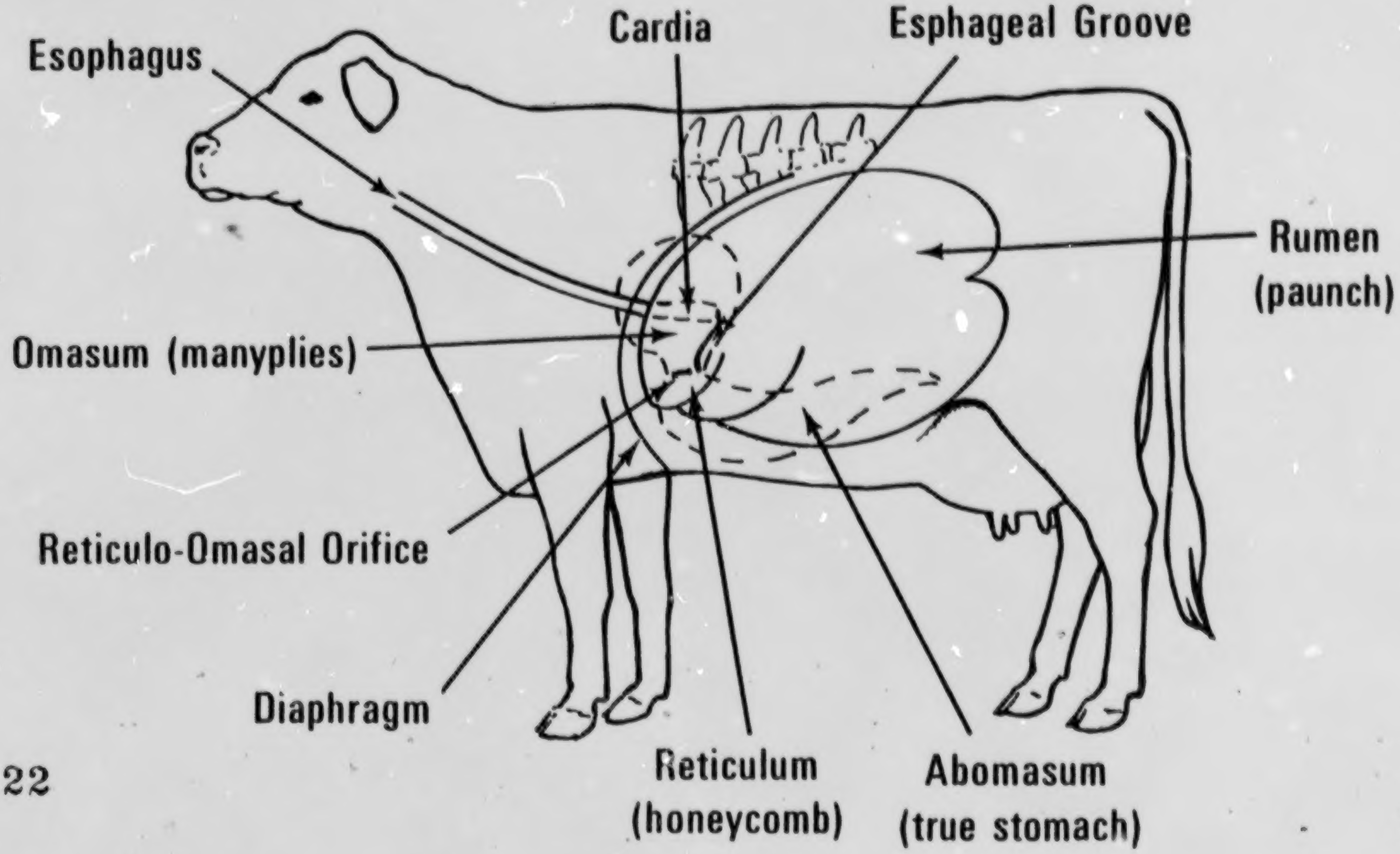

Esophagus
Stomach
Duodenum
Small Intestine
Jejunum
Ileum
Vermiform Process
Colon
Cecum
Rectum
Large Intestine

MAN


Rectum
Colon
Duodenum
Stomach
Esophagus
Ileum
Cecum
Large Intestine
Small Intestine

PIG

Parts of A Ruminant Digestive System


Esophagus
Cardia
Esphageal Groove
Rumen (paunch)
Omasum (manyplies)
Reticulo-Omasal Orifice
Diaphragm
Reticulum (honeycomb)
Abomasum (true stomach)

LIVESTOCK FEEDING
UNIT IV

ASSIGNMENT SHEET #1 - BALANCE RATIONS USING THE PEARSON SQUARE METHOD

Ration #1 16% ration using corn, 6.6% digestible protein and soybean meal, 41% digestible protein. Give pounds of each for a ton of ration.

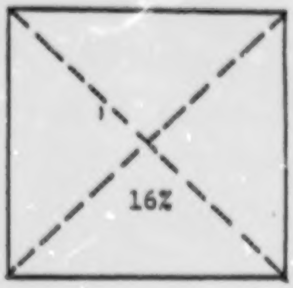
Ration #2 14% ration using barley, 11% digestible protein and a prepared supplement, 36% digestible protein. Mix one ton of ration.

Ration #3 16% ration using equal parts of corn 6.6% and milo 8.8%, and equal parts of soybean meal 44% and meat and bone scraps 55% Mix a ton of ration.

LIVESTOCK FEEDING
UNIT IV

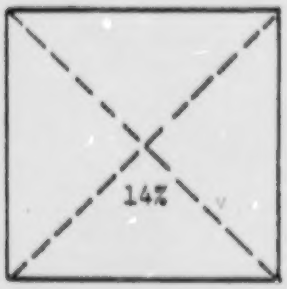
ANSWERS TO ASSIGNMENT SHEET #1

1.



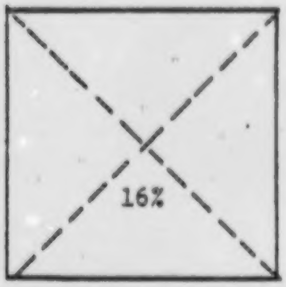
	Parts	Percentage	#/Ton
corn 6.6%	25	73%	1460# corn
SBM 41%	9.4	27%	540# SBM
Total	34.4	100%	2000# ration

2.



	Parts	Percentage	#/ton
barley 11%	22	88%	1760# barley
supplement 36%	3	12%	240# supplement
Total	25	100%	2000# ration

3.



	Parts	Parts	Percentage	#/Ton
7.7%				
milo 8.8%	33.5	16.75 milo	40%	800# milo
corn 6.6%		16.75 corn	40%	800# corn
SBM 44%		4.15 SBM	10%	200# SBM
M&BS 55%	8.3	4.15 M&BS	10%	200# B&BS
49.5%				
Total	41.8	41.8	100%	2000# ration

LIVESTOCK FEEDING
UNIT IV

TEST

1. Match terms on the right with their correct definition.

_____a. Ration which supplies all the necessary nutrients in proper proportions for a period of 24 hours

_____b. Feed high in fiber and low in total digestible nutrients

_____c. Healthy appearance indicating that the animal is doing well on feed

_____d. Tough part of feed which is not very digestible

_____e. Feed necessary for a given animal for 24 hours

_____f. Feed high in total digestible nutrients and low in fiber

_____g. Passing of food materials from digestive tract into the body after they are digested and dissolved

_____h. Proportion of a feed which is usable to supply energy to the animal

_____i. Chewing of food by an animal

_____j. Amount of crude protein in a feed that can be digested by the animal

_____k. Building blocks of protein

_____l. Process which breaks down food before absorption into the body

_____m. Nitrogen containing compounds in feed

1. Ration
2. Balanced ration
3. Nutrient
4. Digestible
5. Digestion
6. Mastication
7. Concentrate
8. Roughage
9. Ruminant
10. Simple stomach animal
11. Crude protein
12. Digestible protein
13. Absorption
14. Bloom
15. Feces
16. Protein
17. Palatable feed
18. Amino acids
19. Total digestible nutrients
20. Fiber

_____n. A feed that is tasty to animals

_____o. That portion of a nutrient which may be digested and absorbed by the animal

_____p. One that has only one stomach

_____q. Nutrient which supplies materials for body growth

_____r. Single class of food that aids in support of life

_____s. Animal that has more than one compartment in his stomach

_____t. Waste material of animals (manure)

2. Fill in the blanks in table with the approximate percentages.

COMPOSITION OF FARM ANIMALS

Animal	Water	Fat	Protein	Mineral Matter
Slaughter steer	a.________	d.________	30%	j.________
Slaughter sheep	61%	e.________	g.________	3%
Slaughter hog	b.________	14%	h.________	k.________
Dairy cow (aged)	c.________	f.________	i.________	l.________

3. Match the parts of a simple digestive system on the right with the correct function.

_____a. Passageway to stomach

_____b. Chewing and secretion of saliva

_____c. Enzymes and pancreatic juices added

_____d. Water absorbed

_____e. Passageway to expel waste

_____f. Hydrochloric acid added and absorption begins

1. Mouth
2. Esophagus
3. Anus
4. Stomach
5. Small intestine
6. Large intestine

4. List four main parts of the ruminant stomach.

a.

b.

c.

d.

5. List six classes of nutrients.

a.

b.

c.

d.

e.

f.

6. List four functions of water in the animal body.

a.

b.

c.

d.

7. Name five purposes of a ration.

   a.

   b.

   c.

   d.

   e.

8. Select from a list the characteristics of a good ration by placing an "X" in front of the correct statements.

   _____a. Hard to get

   _____b. Economical

   _____c. Palatable

   _____d. Contains only roughages

   _____e. Causes no harmful effects

   _____f. Bagged in 50# bags

9. List the characteristics of the following grains used as feedstuffs.

   a. Corn

      1)

      2)

      3)

      4)

   b. Wheat

      1)

      2)

   c. Milo and grain sorghums

      1)

      2)

10. List the composition of a good ration.

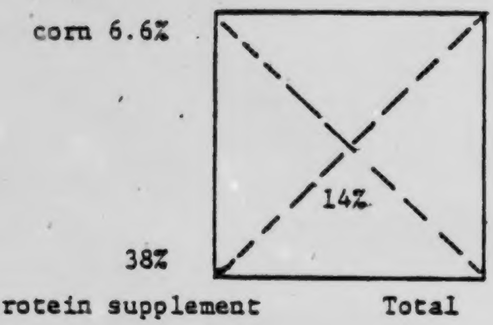
a.
b.
c.
d.

11. Name two thumb rules for feeding swine.

a.

b.

12. Balance a ration for protein content using the square method. Show your work.


corn 6.6%
14%
38%
protein supplement

	Parts	Percentage	#/Ton
corn 6.6%	______	______	______
38% protein supplement	______	______	______
Total	______	100%	2000#

LIVESTOCK FEEDING
UNIT IV

ANSWERS TO TEST

1. a. 2
   b. 8
   c. 14
   d. 20
   e. 1
   f. 7
   g. 13
   h. 19
   i. 6
   j. 12
   k. 18
   l. 5
   m. 11
   n. 17
   o. 4
   p. 10
   q. 16
   r. 3
   s. 9
   t. 15

2. a. 50%
   b. 50%
   c. 59%
   d. 16%
   e. 16%
   f. 18%
   g. 20%
   h. 28%
   i. 18%
   j. 4%
   k. 8%
   l. 5%

3. a. 2
   b. 1
   c. 5
   d. 6
   e. 3
   f. 4

4. a. Rumen
   b. Reticulum
   c. Omasum
   d. Abomasum

5. a. Water
   b. Proteins
   c. Vitamins
   d. Fats
   e. Minerals
   f. Carbohydrates

6. Any four of the following:
   a. Important element in the blood
   b. Dissolves feed
   c. Regulates body temperature
   d. Removes body waste
   e. Transports feed

7. a. Maintenance
   b. Growth
   c. Finishing
   d. Production
   e. Reproduction

8. b,c,e

9. a. Corn
      1. 80% TDN
      2. High in fat
      3. Yellow or white in color
      4. Deficient in protein and mineral

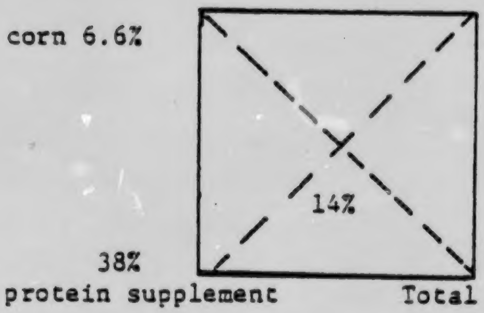
b. Wheat
   1. High in TDN
   2. High in protein

c. Milo and grain sorghums
   1. 70% TDN
   2. Low quality protein

10. a. Concentrate and roughage
    b. Protein of sufficient amount and quality
    c. Minerals in proper amounts
    d. Vitamins in proper amounts

11. Any two of the following:
    a. Nursing sows - Three pounds of grain per 100 pounds of live weight per day
    b. Fattening - Four pounds of grain and supplement per 100 pounds of live weight per day
    c. 350 pounds of grain and supplement to produce 100 pounds of live weight

12.



Parts	Percentage	#/Ton
24	76%	1520#
7.4	24%	480#
31.4	100%	2000#

THE LIVESTOCK INDUSTRY
UNIT I

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to discuss the current trends in the livestock industry and its importance to agriculture and the economy. He should be able to match occupations associated with the livestock industry with the correct description. This knowledge will be evidenced by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with the livestock industry to their correct definitions.
2. Reproduce the basic production -distribution cycle.
3. Select from a list the four primary classes of livestock grown in Kansas.
4. Match the approximate number with the correct class of livestock in Kansas and the United States.
5. Reproduce a chart illustrating the trends of the livestock industry in Kansas.
6. Match occupations in the livestock industry with their descriptions.
7. Describe the impact that the beef cattle industry has made on Kansas agriculture.

THE LIVESTOCK INDUSTRY
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide each student with objectives
- B. Provide each student with information sheet
- C. Make transparencies
- D. Discuss terminal and specific objectives
  (NOTE: Objectives may be used as a pretest)
- E. Discuss information sheet
- F. Give test

II. Student:

- A. Read objectives
- B. Study information sheet and take notes
- C. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objective sheet
- B. Information sheet
- C. Transparency masters
    - 1. TM 1 - Swine in Kansas 1963-75
    - 2. TM 2 - Cattle and Calves in Kansas 1963-75
    - 3. TM 3 - Sheep in Kansas 1963-75
- D. Test
- E. Answers to test

II. References:

- A. Annual Report-Kansas Agriculture, Kansas State Board of Agriculture, Topeka, Kansas, Robert R. Sanders, State Printer, 1975
- B. Hoover, Norman K. Handbook of Agricultural Occupations. Danville, Illinois: Interstate Printers and Publishers, Inc., 1963
- C. Krebs, Alfred H. Agriculture in our lives Danville, Illinois: Interstate Printers and Publishers, Inc., 1964
- D. Statistical Abstract of the United States. Washington, D.C.: United States Department of Commerce Publications, Bureau of Census, 1972

E. Our Land and its Care. Washington, D.C.: National Plant Food Institute.

F. McCoy, John H., Livestock and Meat Marketing. 2nd ed. 1979. AVI Publishing Co. P.O. Box 831, Westport, Conn.

G. Agriculture Chartbook, Outlook. Dept. of Agriculture, Washington, D.C.: Government Printing Office, 1971.

H. Stone, Archie A. Careers in Agriculture, Business and Industry. Danville, Illinois: Interstate Printers and Publishers, Inc., 1965

I. Evans, Everett F. and Ray L. Donahue. Exploring Agriculture. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963.

J. 1973 Handbook of Agricultural Charts, Agricultural Handbook #455, USDA, Washington, D.C.

K. Economic Characteristics of Kansas Livestock, Cooperative Extension Service; Kansas State University, Manhattan, Kansas SB-537

THE LIVESTOCK INDUSTRY
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Agricultural industry - Includes: (1) the farm industry which produces the commodities, (2) the industries which supply and service the farm industry, and (3) the industries which process and distribute to the consumer

B. Commodity - Products of agriculture such as beef, pork, and wheat

C. Consumer - Those who use the products of agriculture such as the housewife

D. Cycle - The regular changes in price and production of agricultural commodities

E. Distribution - The means by which agricultural products are made available to the consumer

F. Processing - The preparing of farm products for use (slaughtering, cutting, and packaging)

G. Production - The growing of agricultural products

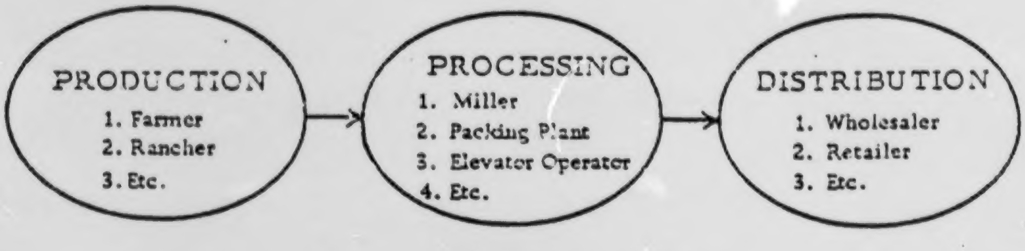
H. Trends - Direction of movement of a commodity in terms of production and prices (up, down, or steady)

I. Feeder animal - Animals that have been fattened on grass and are ready for the feedlot

J. Stocker animal - Animals that are to be placed on pasture for further growth

K. Market animal - An animal that has been fed to the acceptable market weight for that class; usually for slaughter
(NOTE: examples, cattle - 1000-1200 lbs. swine - 220-240 lbs. lambs - 100-120 lbs.)

II. Basic production-distribution cycle


PRODUCTION
1. Farmer
2. Rancher
3. Etc.
PROCESSING
1. Miller
2. Packing Plant
3. Elevator Operater
4. Etc.
DISTRIBUTION
1. Wholesaler
2. Retailer
3. Etc.

III. Primary class of livestock in Kansas (1974)

A. Beef cattle and calves - Number one in the state in rank and value of all principal crops and livestock

B. Swine - Number four in rank and value of all principal crops and livestock

C. Dairy cattle and products - Number five in the state compared to all other principal crops and livestock

D. Sheep - Number ten in rank and value of all principal crops and livestock grown in Kansas

IV. Number of beef, sheep, swine, and dairy

		Kansas (1979)	
A.	All cattle and calves	6,200,000	110,864,000
B.	Beef cows	1,754,000	36,989,000
C.	Sheep	208,000	12,224,000
D.	Swine	1,960,000	59,860,000
E.	Dairy cows	136,000	10,853,000
F.	Poultry (not broilers)	2,600.00	394,505,000

V. Trend of the livestock industry in Kansas 1963-79 (Transparencies 1, 2, and 3)

VI. Occupations in the livestock industry

A. Farmer or rancher - Concerned with the initial production of products

B. Farm or ranch hand - Works for the farmer or rancher and assists in the operation

C. Farm or ranch foreman - Has the responsibility for the day-to-day work operations of a farm or ranch

D. Feedlot manager - Has charge of feeding cattle for market

E. Feedlot employee - Works in one of the departments of the feedlot system such as truck driver or bookkeeper

F. Auctioneer - Sells livestock at the markets

G. Artificial inseminator - Breeds livestock artificially

(NOTE: The artificial inseminator may be an employee of a breeder's association.)

H. Feed store manager - Supplies feed, seed and equipment to farmers

I. Feed store employee - Assists in operating some phase of the feed store such as salesman or deliveryman

J. Feed mill operator - Operates a feed mill for a feedlot or feed store

K. Cattle buyer - Buys cattle for farmers, feeders, and packing plants

L. Commission man - Sells livestock for the farmer or rancher

VII. Main out-of-state feeder cattle buyers

A. Oklahoma

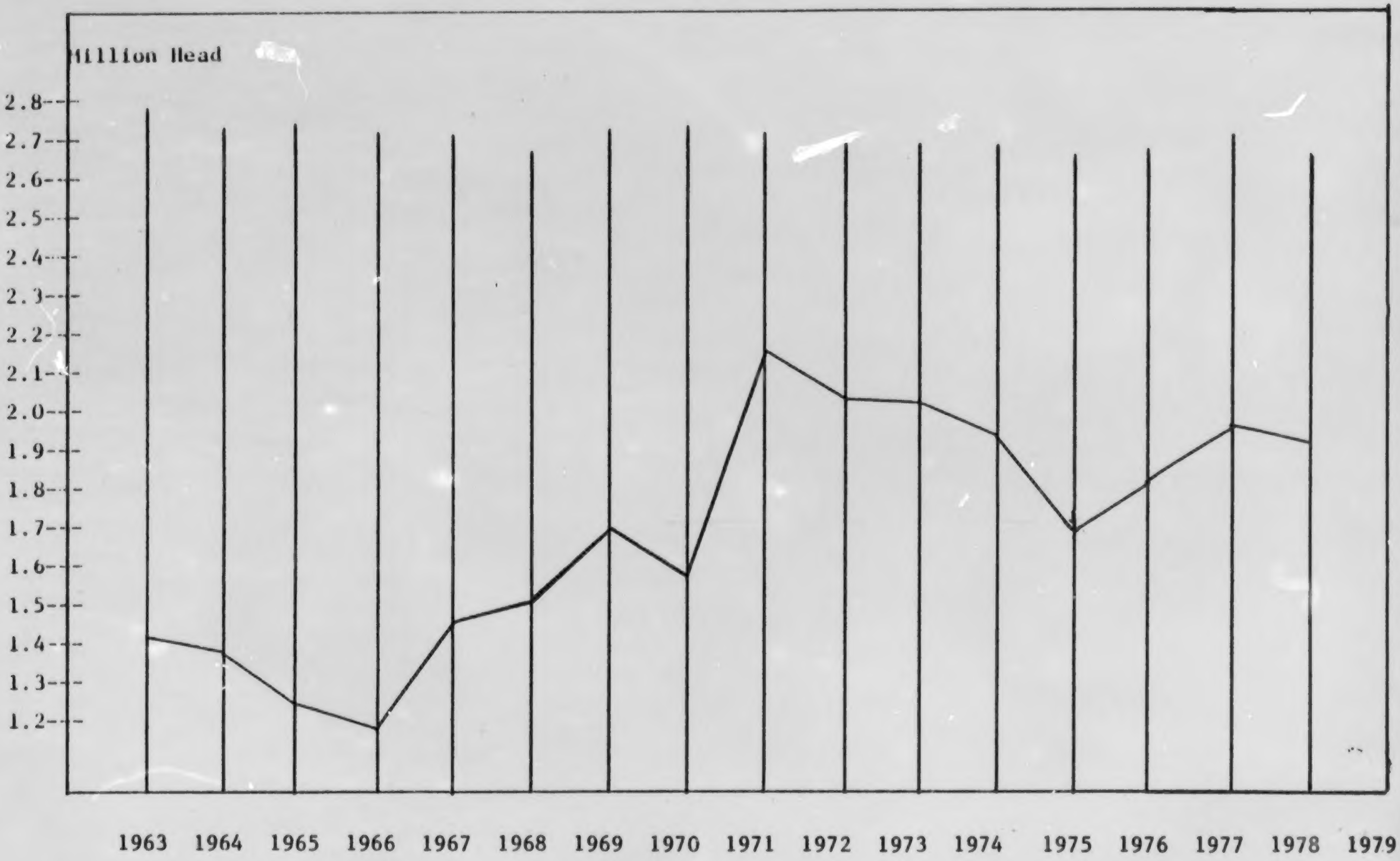
B. Texas

C. Missouri

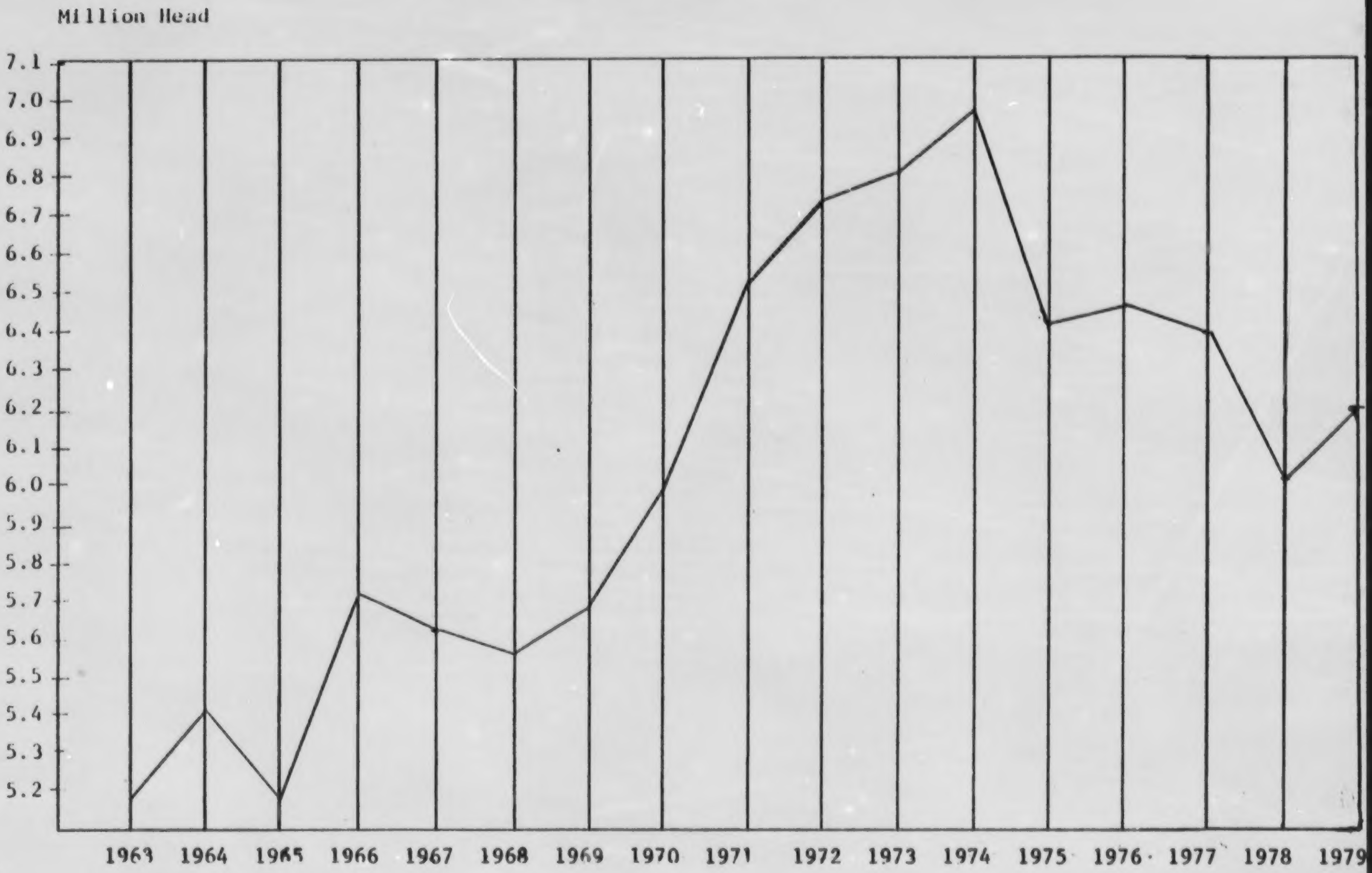
D. Colorado

E. Alabama

SWINE IN KANSAS 1963-78

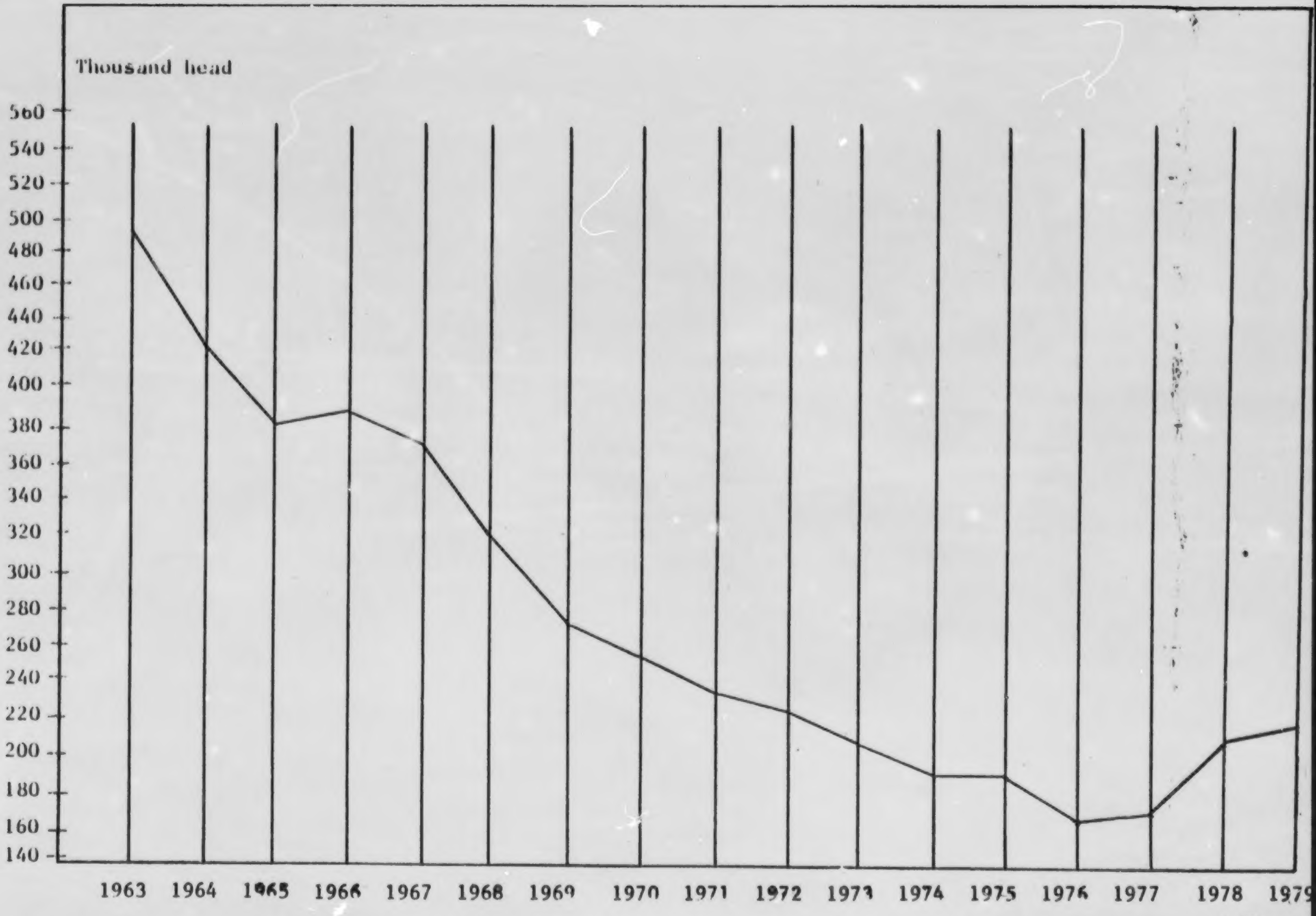


CATTLE AND CALVES IN KANSAS 1963-79



TM 2

SHEEP IN KANSAS 1963-79



TM 3

THE LIVESTOCK INDUSTRY
UNIT I

TEST

1. Match the terms on the right with its correct definition.

_____a. The regular changes in price and production of agricultural commodities

_____b. The growing of agricultural products

_____c. Products of agriculture such as beef, pork, and wheat

_____d. Those who use the products of agriculture such as the housewife

_____e. Cattle that are to be placed on pasture for further growth

_____f. Direction of movement of a commodity in terms of production and prices (up, down, or steady)

_____g. Includes: (1) the farm industry which produces the commodities, (2) the industries which supply and service the farm industry, and (3) the industries which process and distribute to the consumer

_____h. The means by which agricultural products are made available to the consumer

_____i. Cattle that have been fattened on grass and are ready for the feedlot

_____j. The preparing of farm products for use (slaughtering, cutting, and packaging)

1. Agricultural Industry
2. Commodity
3. Consumer
4. Cycle
5. Distribution
6. Processing
7. Production
8. Trends
9. Feeder cattle
10. Stocker cattle

2. Reproduce the basic production-distribution cycle.

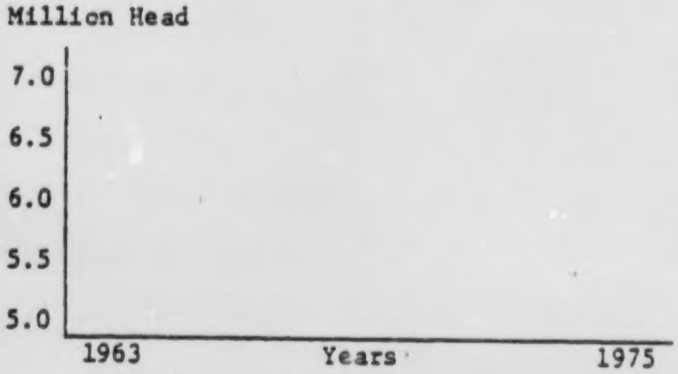
3. Place an "X" in front of the four primary classes of livestock raised in Kansas.

_____a. Poultry
_____b. Cattle and calves
_____c. Mules
_____d. Dairy
_____e. Swine
_____f. Sheep
_____g. Horses

4. Match the approximate number with the correct class of livestock in Kansas.

_____a. Cattle and calves 1. 147,000
_____b. Swine 2. 200,000
_____c. Sheep 3. 1,750,000
_____d. Dairy 4. 6,400,000

5. Draw a chart showing the general trend of the beef industry in Kansas.



6. Match the occupation in the livestock industry with its correct description.

_____a. Concerned with the initial production of products

_____b. Has charge of feeding cattle for market

_____c. Sells livestock at the markets

_____d. Supplies feed, seed, and equipment to farmers

_____e. Operates a feed mill for a feedlot or feed store

_____f. Sells livestock for the farmer or rancher

_____g. Works for the farmer or rancher and assists in the operation

_____h. Has the responsibility for the day-to-day work operations of a farm or ranch

_____i. Works in one of the departments of the feedlot system such as truck driver or bookkeeper

_____j. Breeds livestock artificially

_____k. Assist in operating some phase of the feed store, such as salesman or deliveryman

_____l. Buys cattle for farmers, feeders, and

1. Farmer or rancher
2. Farm or ranch hand
3. Farm or ranch foreman
4. Feedlot manager
5. Feedlot employee
6. Auctioneer
7. Artificial inseminator
8. Feed store manager
9. Feed store employee
10. Feed mill operator
11. Cattle buyer
12. Commission man

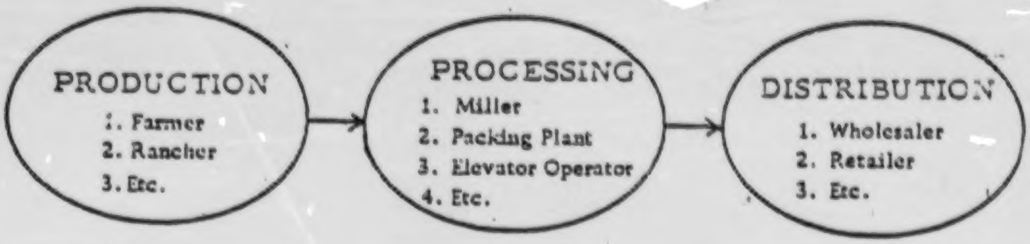
7. Name four of the main out-of-state feeder cattle buyers

THE LIVESTOCK INDUSTRY

ANSWERS TO TEST

1. a. 4
   b. 7
   c. 2
   d. 3
   e. 10
   f. 8
   g. 1
   h. 5
   i. 9
   j. 6

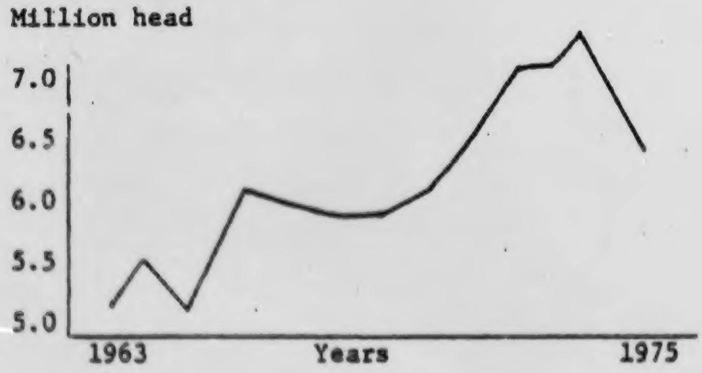
2.


PRODUCTION
1. Farmer
2. Rancher
3. Etc.
PROCESSING
1. Miller
2. Packing Plant
3. Elevator Operator
4. Etc.
DISTRIBUTION
1. Wholesaler
2. Retailer
3. Etc.

3. b,d,e,f

4. a. 4
   b. 3
   c. 2
   d. 1

5.



6. a. 1
   b. 4
   c. 6
   d. 8
   e. 10
   f. 12
   g. 2
   h. 3
   i. 5
   j. 7
   k. 9
   l. 11

7. Any four of the following
   a. Oklahoma
   b. Texas
   c. Missouri
   d. Colorado
   e. Alabama

MAINTAINING ANIMAL HEALTH
UNIT IV

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to develop a plan for maintaining animal health. He should be able to apply prevention measures in maintaining animal health for his own livestock. The student should score eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Define five terms related to animal health.
2. Develop a plan for maintaining animal health.
3. Name five signs of good animal health.
4. Name three signs of poor animal health.
5. Select the average temperature range for livestock and poultry.
6. Name five factors that constitute a good disinfection program.
7. Identify and distinguish between the four kinds of injections.
8. Name four agencies that regulate animal health.

MAINTAINING ANIMAL HEALTH
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet
  B. Provide students with information sheets
  C. Discuss terminal and specific objectives
  D. Demonstrate to the student the proper procedures for vaccinating an animal
  E. Give test

  (NOTE: Instructor may want to use a guest speaker or field trip to a farm or feedlot to contrast healthy and sick animals.)

II. Students:

  A. Study information sheets
  B. Apply proper sanitation practices to his home farm
  C. Vaccinate one animal each
  D. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives
  B. Information sheets
  C. Transparency master
    1. TM 1 - Illustrations Showing Injection Points
  D. Test
  E. Answers to test

II. References:

A. Animal Science, M.E. Ensminger, Interstate Printers and Publishers, Danville, Illinois, 1965.

B. The Stockman's Handbook, M.E. Ensminger, Interstate Printers and Publishers, Danville, Illinois.

C. Livestock and Poultry Production, Clarence E. Bundy and Ronald V. Diggins, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

D. Texas Agricultural Education Instructional Materials, Texas Agricultural Education Teaching Materials Center, College Station, Texas.

MAINTAINING ANIMAL HEALTH
UNIT IV

INFORMATION SHEET

I. Terms and definitions

   A. Vaccination - An injection of some agent into an animal for the purpose of preventing disease

   B. Vaccine - A preparation containing killed or live microorganisms that are given to the animal to produce an immunity to a particular disease

   C. Disinfectant - A substance which destroys infective agents

   D. Antiseptic - A substance that will inhibit the growth of microorganisms without destroying them

   E. Injection - The placing of a vaccine or antibiotic into an animal's body

   F. Serum - The watery portion of an animal's blood which will stop the action of an infectious agent

   G. Syringe - An instrument used to make injections, consisting of plunger, barrel, and various types and sizes of needles

   H. Antibody - Specific chemicals in the blood serum that kill disease causing organisms or so weaken them to make them ineffective

   I. Phagocytes - White blood corpuscles that produce antibodies and antitoxins to fight disease

II. Animal health plan

   A. Proper housing and ventilation

   B. Proper manure disposal

   C. Control of rodents and birds

   D. Use of disinfectants

   E. Proper carcass disposal

   F. Proper isolation of new animals

   G. Pasture rotation

   H. Vaccination

   I. Parasite control

VI. Effective disinfection

  A. Cleanliness of area before applying disinfectant

  B. Killing strength of the disinfectant

  C. Dilution at which the disinfectant is used

  D. Thoroughness of application

VII. Kinds of injections (Transparency 1)

  A. Subcutaneous - Injection placed under the skin

  B. Intravenous - Injection placed in a vein when fast action is wanted

  C. Intramuscular - Injection placed in the muscle, usually the thigh or neck

  D. Oral - Injection placed through the mouth into the stomach

  E. Intraperitoneal - Injection placed in the right side of the abdominal cavity

  F. Udder infusion - Injection placed in the udder

VIII. Regulative agencies for animal health

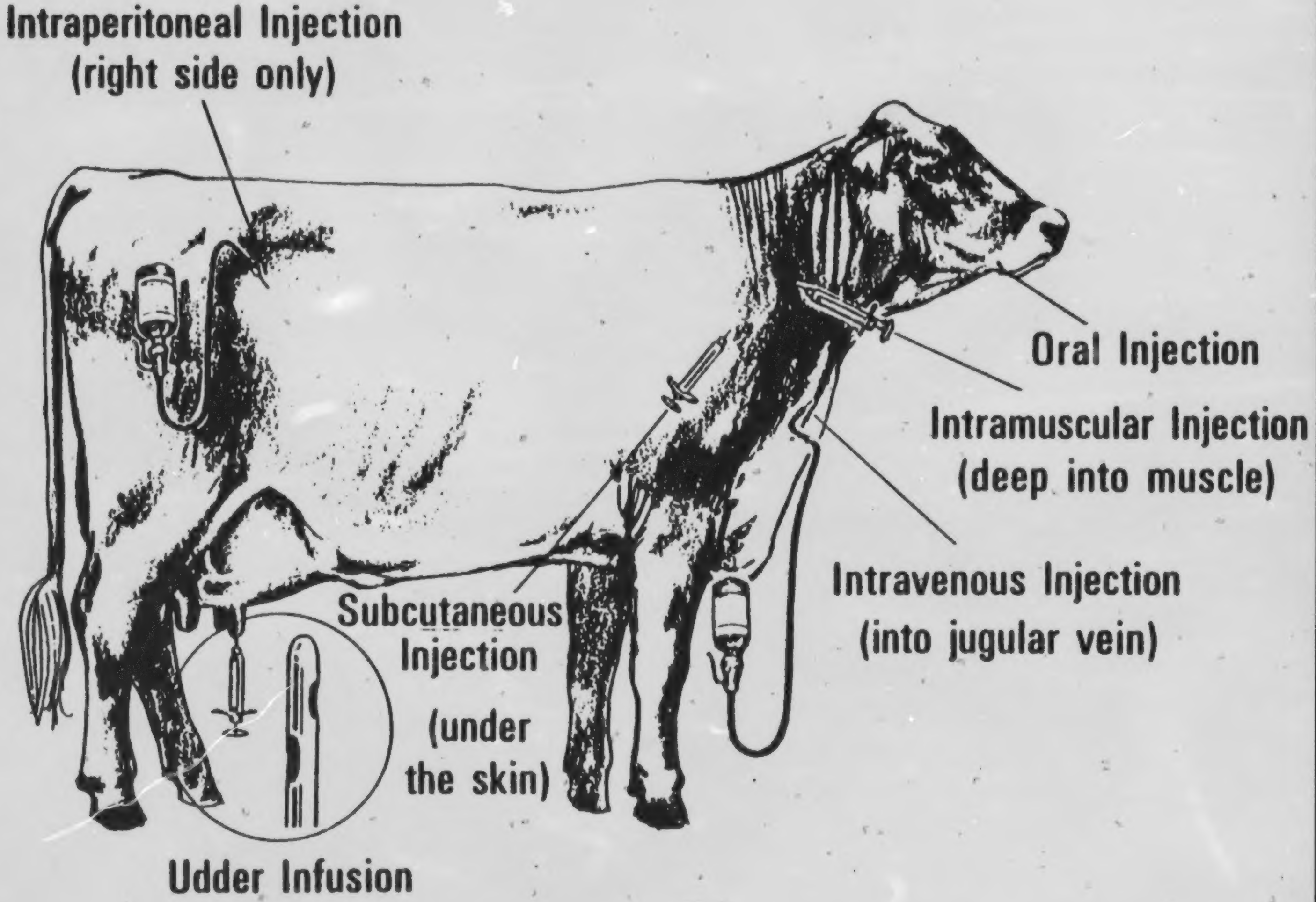
  A. Animal disease eradication division

  B. State veterinarians

  C. State sanitary commissions

  D. State agricultural boards

Injection Points


Intraperitoneal Injection
(right side only)
Oral Injection
Intramuscular Injection
(deep into muscle)
Intravenous Injection
(into jugular vein)
Subcutaneous
Injection
(under
the skin)
Udder Infusion

MAINTAINING ANIMAL HEALTH
UNIT IV

TEST

1. Match the definition with the proper health terms:

_____a. Vaccination

_____b. Disinfectant

_____c. Injection

_____d. Vaccine

_____e. Antiseptic

1. The placing of a vaccine or antibiotic into an animal's body
2. A substance that will inhibit the growth of microorganisms without destroying them
3. A preparation containing killed or live microorganisms that is given to the animal to produce an immunity to a particular disease
4. An injection of some agent into an animal for the purpose of preventing disease
5. A substance which destroys infective agents

2. What should be included in the development of an animal health plan?

a.

b.

c.

d.

e.

3. Name five good signs of animal health.

a.

b.

c.

d.

e.

4. Name three signs of poor animal health.

a.

b.

c.

5. Select the proper temperature of each animal listed below.

_____a. Swine
_____b. Horses
_____c. Sheep
_____d. Cattle
_____e. Poultry
_____f. Goats

1. 103.8 Average Degree F
2. 102.6 Average Degree F
3. 100.5 Average Degree F
4. 106.0 Average Degree F
5. 101.5 Average Degree F
6. 102.3 Average Degree F

6. What factors influence the quality of a good disinfection program?

a.

b.

c.

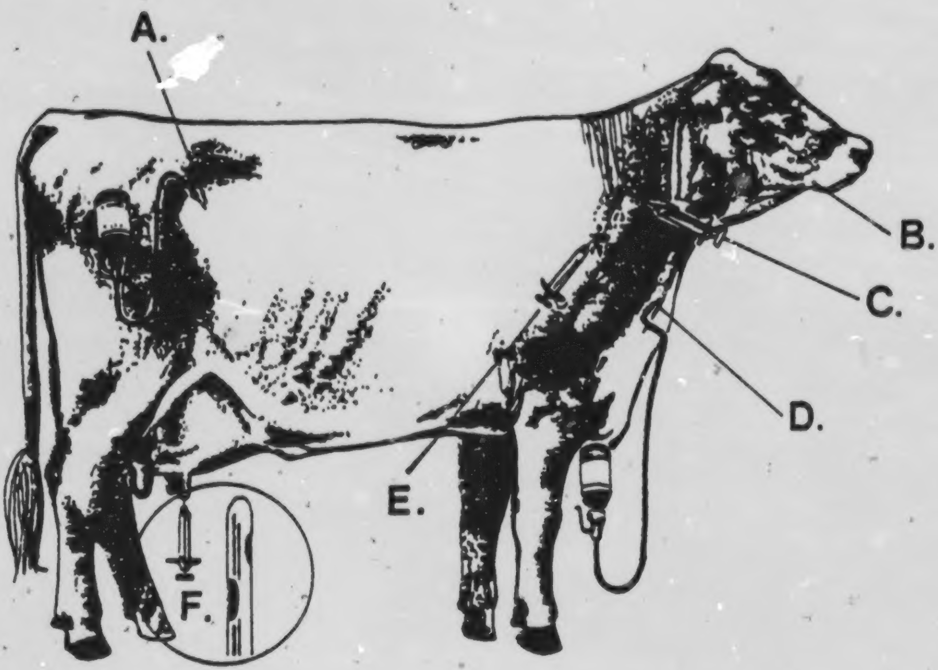
d.

7. Match the following statements with the proper types of injections.

_____a. Oral
_____b. Intramuscular
_____c. Subcutaneous
_____d. Intravenous
_____e. Intraperitoneal
_____f. Udder

1. Injection placed under skin
2. Injection placed through the mouth
3. Injection placed in a vein
4. Injection placed in a muscle
5. Injection placed in the abdominal cavity
6. Injection placed in the udder

8. Identify the points of injections from the drawing below.



A.______________________________

B.______________________________

C.______________________________

D.______________________________

E.______________________________

F.______________________________

9. List four agencies that regulate animal health.

   a.

   b.

   c.

   d.

MAINTAINING ANIMAL HEALTH
UNIT IV

ANSWERS TO TEST

1. a. 4
   b. 5
   c. 1
   d. 3
   e. 2

2. Any five of the following:
   a. Proper housing and ventilation
   b. Proper manure disposal
   c. Control of rodents and birds
   d. Disinfectants
   e. Proper carcass disposal
   f. Proper isolation of new animals
   g. Pasture rotation
   h. Vaccination
   i. Parasite control

3. Any five of the following:
   a. Contentment
   b. Alertness
   c. Cudding by ruminants
   d. Sleek coat
   e. Bright eyes and pink eye membrane
   f. Normal temperature, pulse rate, and breathing rate

4. Any three of the following:
    a. Loss of appetite
    b. Rough hair coat
    c. Abnormal feces
    d. Not ruminating
    e. Dull eyes
    f. High temperature
    g. Discolored urine

5. a. 2
    b. 3
    c. 6
    d. 5
    e. 4
    f. 1

6. a. Cleanliness of area before applying disinfectant
    b. Killing streugth of the disinfectant
    c. Dilution at which the disinfectant is used
    d. Thoughness of application

7. a. 2
    b. 4
    c. 1
    d. 3
    e. 5
    f. 6

8. a. Intraperitoneal
    b. Oral
    c. Intramuscular
    d. Intravenous
    e. Subcutaneous
    f. Udder

9. a. Animal disease eradication division
    b. State veterinarians
    c. State sanitary commissions
    d. State agricultural boards

PARASITES
UNIT VI

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to distinguish between external and internal parasites. He should be able to develop a plan for preventing parasites and be able to recognize the life cycle of parasites and develop means of control. This knowledge will be evidenced by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion, the student should be able to:

1. Define five terms associated with parasites.
2. Name five methods and means of preventing external and internal parasites.
3. Divide ten parasites into two groups according to external and interanl classifications.
4. Identify seven external parasites when given a drawing showing the parasites.
5. Label a drawing showing the life cycle of the cattle grub.
6. Reproduce the life cycle of the swine large intestinal roundworm.
7. Interpret the life cycle of the horn fly when given a drawing illustrating the cycle.
8. Design a chart showing the names of five parasites, telling animals affected, symptoms, prevention, and control.

PARASITES
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor
   - A. Provide students with objective sheet
   - B. Provide students with information sheet
   - C. Make transparencies
   - D. Discuss terminal and specific objectives with students
   - E. Give test

II. Students
   - A. Read objective sheet
   - B. Study information sheet
   - C. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   - A. Objectives
   - B. Information sheet
   - C. Transparency masters
     - TM 1--External Parasites
     - TM 2--Life Cycle of the Cattle Grub
     - TM 3--Life Cycle of the Swine Intestinal Roundworm
     - TM 4--Life Cycle of the Horn Fly
   - D. Test
   - E. Answers to test

II. References:
   - A. Beef Cattle Production, Kenneth A. Wagnon, Reuben Albaugh, George H. Hart, The MacMillan Company, New York, New York.

B. Swine Production, Clarence E. Bundy, Ronald V. Diggins, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

C. The Stockman's Handbook, M.E. Ensminger, The Interstate Printers and Publishers, Inc., Danville, Illinois.

PARASITES
UNIT VI

INFORMATION SHEET

I. Terms and definitions

   A. Parasite - An organism that lives on and gets its food from some other plant or animal

   B. Life cycle - The series of changes through which an organism passes

   C. Metamorphosis - A change in the form of structure of an animal occuring subsequent of birth or hatching

   D. External parasites - One that lives on or under the skin

   E. Internal parasite - One that lives within the organs of the body

   F. Blowfly - A fly that breeds in necrotic animal flesh

   G. Screwworm fly - A fly that raises its maggots in the open wounds of animals

   H. Horn fly - One of the most numerous and worst annoying pests of cattle

   I. Grubs - The maggot stage of honey-bee-like insects known as heel flies

   J. Ringworm - A contagious disease of the outer layer of skin caused by certain microscopic molds and fungi

   K. Lice - The small flattened wingless insect parasites

   L. Horse fly - A large fly that transmits anaplasmosis of cattle

   M. Coccidiosis - A parasitic disease caused by protozoan organisms known as coccida

   N. Intestinal worm - A long worm found in the stomach, small intestine, and colon

   O. Lungworm - A white threadline worm 1½ to 3 inches long found in the trachea and bronchi of cattle

   P. Ascarids - A yellowish or pinkish worm 8 to 15 inches long, almost the size of a lead pencil

   Q. Tick - A blood-feeding parasite known to transmit some disease-bearing organisms from one animal to another

   R. Insecticide - A chemical used to kill insects

   S. Contact poison - A substance absorbed through the insect's skin or body wall which acts on the pest's nervous system

   T. Stomach poison - The material which is eaten and digested by the insect

   U. Systemic poison - A substance taken up by the plant which kills the insect when it eats that plant. Unharmful to plant.

II. Methods and means of preventing parasites
  A. Preventing external parasites
    1. Keep manure cleaned from barnyards to prevent fly breeding
    2. Spray livestock regularly
    3. Spray livestock housing
    4. Control grubs before they damage the hide
    5. Spray and isolate new animals
    6. Check livestock frequently
  B. Preventing internal parasites
    1. Practice pasture rotation
    2. Check animals regularly
    3. Treat animals showing signs of parasites
    4. Practice good lot sanitation
    5. Drain wet pasture sites
    6. Graze young animals on clean pastures

III. Parasites (Transparency 1)

A. External	Species Affected	Symptoms	Preventions and Controls
Blow Fly	Cattle, sheep, and swine	Infected wounds; soiled hair or fleece; animals become weak and fevered	Use proper procedures for destroying dead animals. Use traps, poisoned baits, and repellants
Horn Fly	Cattle	Cattle refuse to graze; seek protection by hiding in buildings, brush, or tall grass	Remove manure from around barn. Spray animals frequently from early May until frost. Use Methoychlor, Toxaphene, Malathion, Ronnel, Co-Ral
Screwworm Fly	Cattle, sheep and swine	Loss of appetite and poor condition	Branding, dehorning, and castrating during winter months. Keep property free of trash and report all cases to proper authority. Kill in larva stage. Use EQ 335 and Co-Ral.
Heel Fly	Cattle	Grub (larva) in back of cattle from December to May; swelling in backs of animals	Control flies between June and October. Use Co-Ral. Do not use after October 15.
Tick	Cattle, sheep, and swine	May cause anaplasmosis. Animals become weak, lose weight, and ears droop	Spray or dust frequently. Use Lindane, Toxaphene, and Malathion.
Lice	Cattle, sheep, and swine	Irritation, restlessness and loss of condition. Some lice cause animals to become anemic.	Spray frequently from October until spring. Use Tozaphene, Co-Ral, and Malathion.

Ringworm	Cattle, sheep, and swine	Round, scaley areas around eyes, ears, and neck	Isolate affected animals, disinfect equipment, and practice strict sanitation. Apply iodine solution.

B. Internal	Species Affected	Symptoms	Preventions and Controls
Coccidiosis	Cattle, sheep, and swine	Diarrhea, bloody feces, and weakness	Avoid contaminated feed and water, isolate affected animals, and keep fedders and waterers sanitary. Consult veterinarian.
Intestinal Worm	Cattle, sheep, and swine	Loss of weight, poor rate of gain, anemia, and/or diarrhea	Rotate pastures, isolate calves and lambs from adult animals, and keep feeders and waterers sanitary. Use Phenothiazine.
Lungworm	Cattle, sheep, and swine	Coughing, labored breathing, and loss of appetite (Young animals become stunted and unthrifty)	Practice good sanitation. Do not spread infested manure on pasture. Use Dictycide.
Ascarid	Swine	Coughing and hard breathing (Young pigs become unthrifty and stunted; liver damage)	Clean farrowing quarters. Wash sows before farrowing, place sows and pigs on clean pasture after farrowing. Use Piperazine, sodium, and fluoride.
Mites	Cattle, sheep, and swine	Skin irritated; itching and scratching	Spraying and dipping. Use Lindane, lime-sulfur.
Liver Fluke	Cattle and sheep	Anemia, digestive disturbances, loss of weight	Avoid wet pastures. Use a good drench---Hexachlorethane - Bentonite mixture.

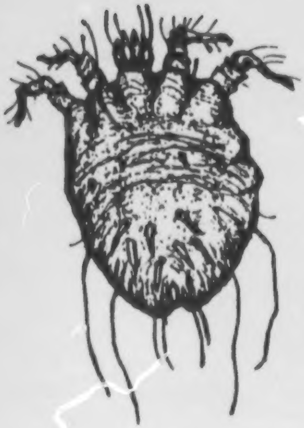
Stomach Worm	Sheep	No specific symptoms	Pasture rotation. Drench with Phenothiazine.
Tapeworm	Cattle, sheep, and swine	No specific symptoms	Pasture rotation. Use copper sulfate-nicotine sulfate.

IV. Life cycle of the cattle grub (Transparency 2)

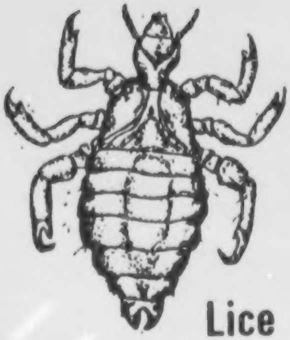
V. Life cycle of the swine intestinal roundworm (Transparency 3)

VI. Life cycle of the horn fly (Transparency 4)

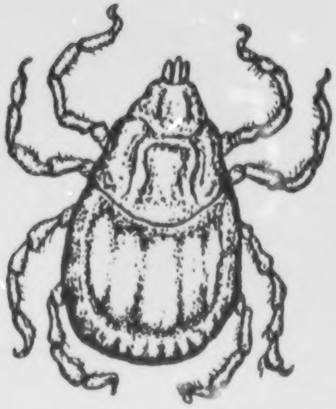
External Parasites



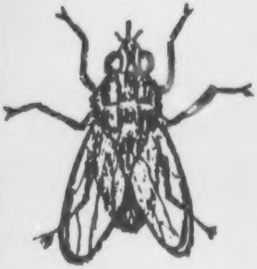
Mite



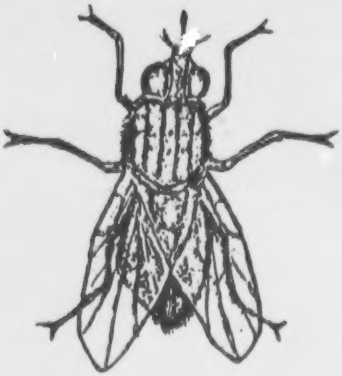
Lice



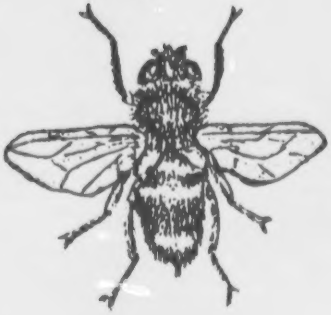
Tick



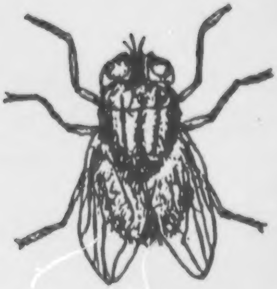
Horn Fly



Barn Fly

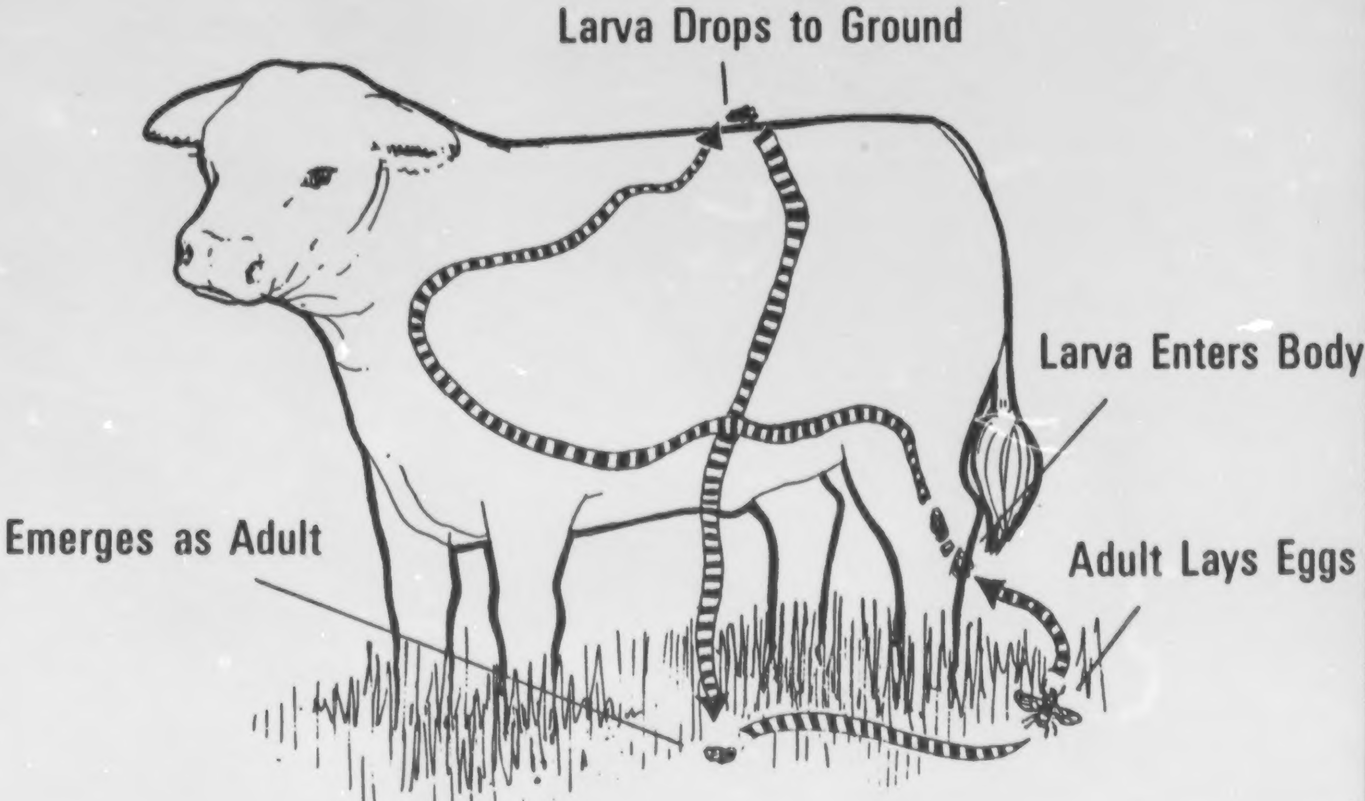


Heel Fly

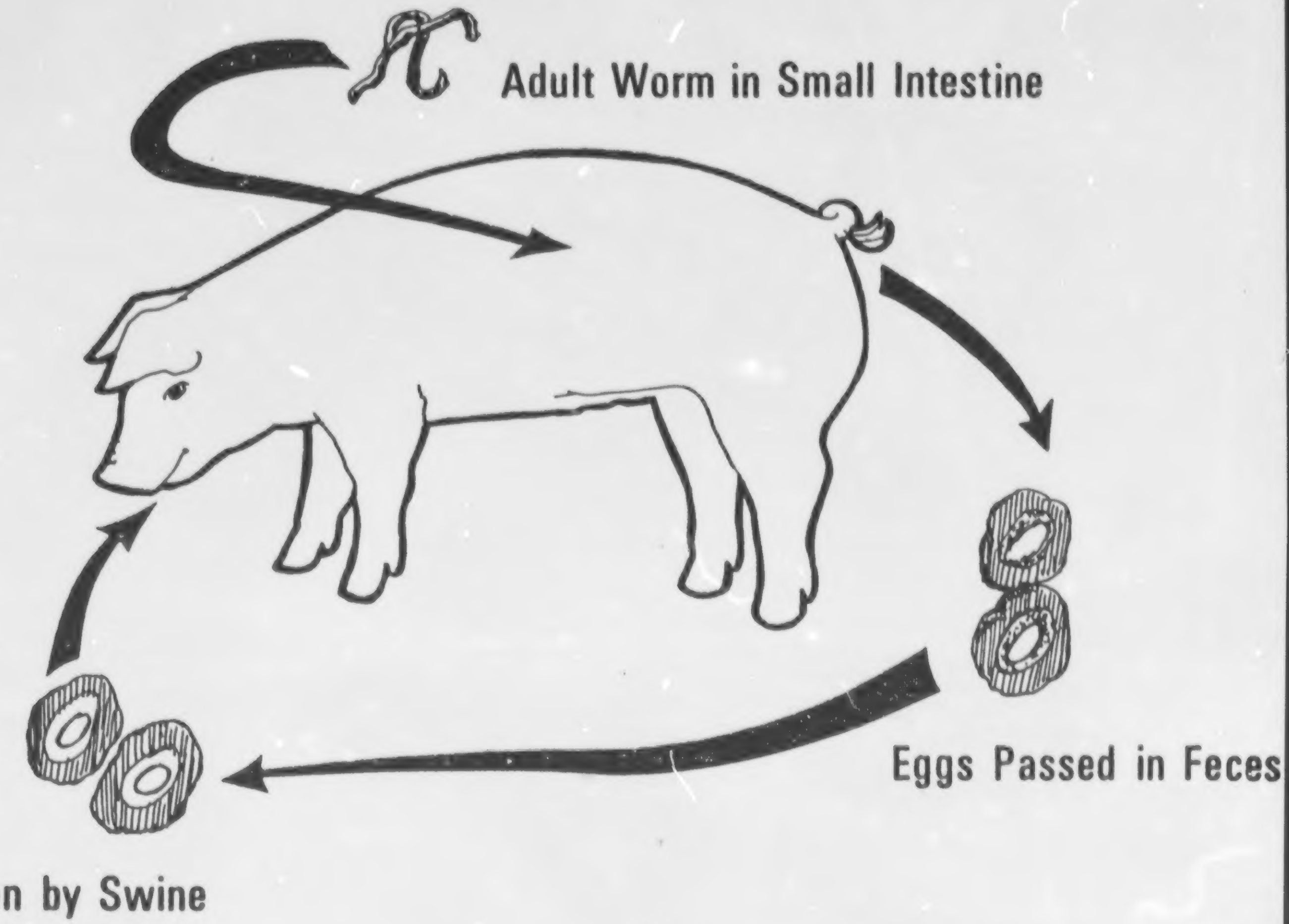


Screwworm Fly

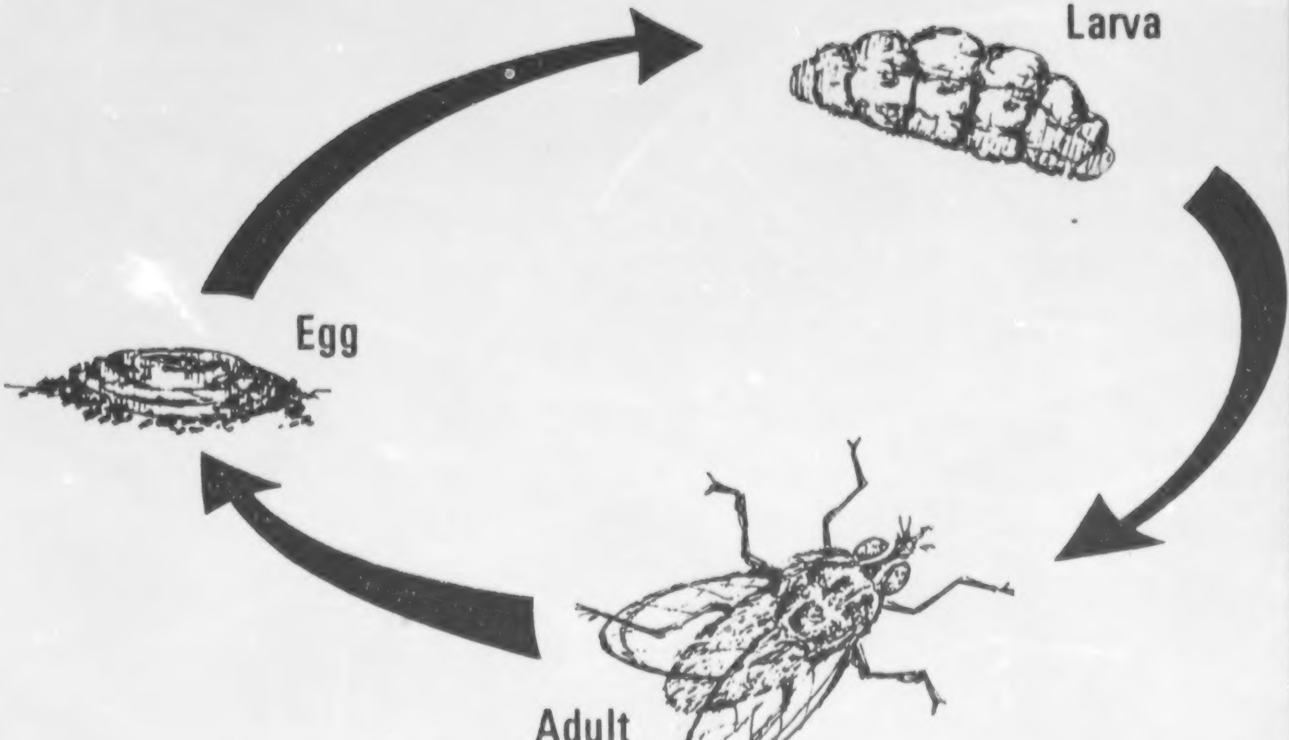
Life Cycle of the Cattle Grub


Larva Drops to Ground
Larva Enters Body
Adult Lays Eggs
Emerges as Adult

Life Cycle of the Swine Intestinal Roundworm


Adult Worm in Small Intestine
Eggs Passed in Feces
Eggs Eaten by Swine

Life Cycle of the Horn Fly


Larva
Egg
Adult

PARASITES
UNIT VI

TEST

1. Define the following terms:
   a. Parasite -
   b. Coccidiosis -
   c. Tick -
   d. External parasite -
   e. Internal parasite -

2. A. Name five methods of preventing internal parasites.
      1.
      2.
      3.
      4.
      5.

   B. Name five methods of preventing external parasites.
      1.
      2.
      3.
      4.
      5.

3. From this group of parasites, divide them into external and internal. Place an "E" in the blank before an external parasite and an "I" before an internal parasite.

_____a. Horn fly

_____b. Coccidiosis

_____c. Blow fly

_____d. Horse fly

_____e. Grub

_____f. Lungworm

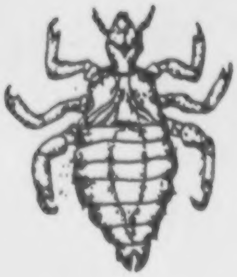
_____g. Lice

_____h. Tick

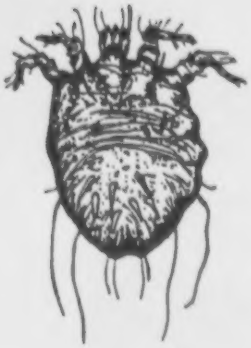
_____i. Intestinal worm

_____j. Screwworm fly

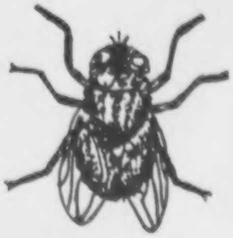
4. Identify the following:



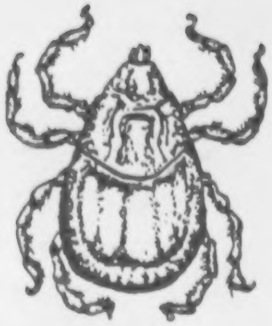
A.____________________



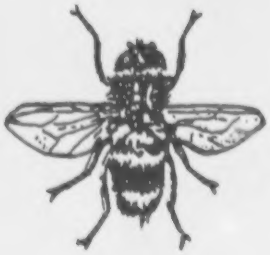
B.____________________



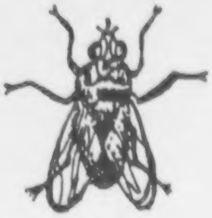
C.____________________



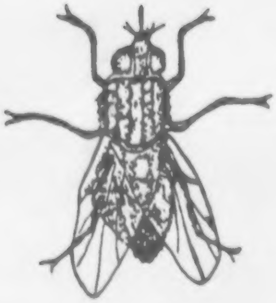
D.____________________



E.____________________

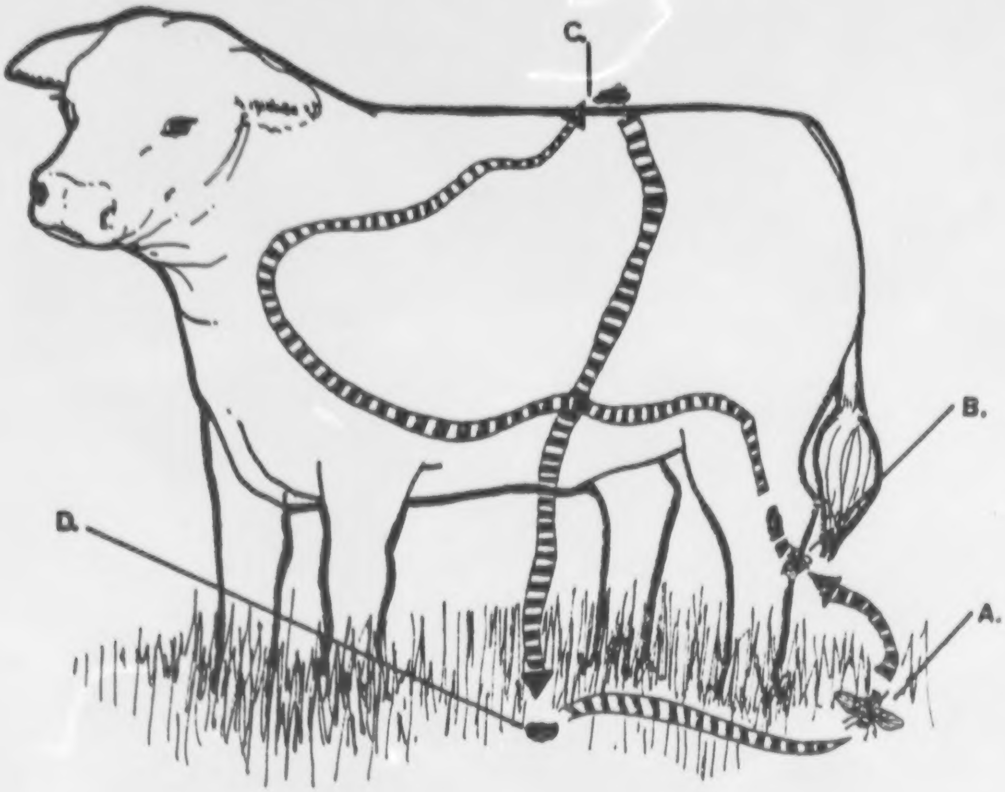


F.____________________



G.____________________

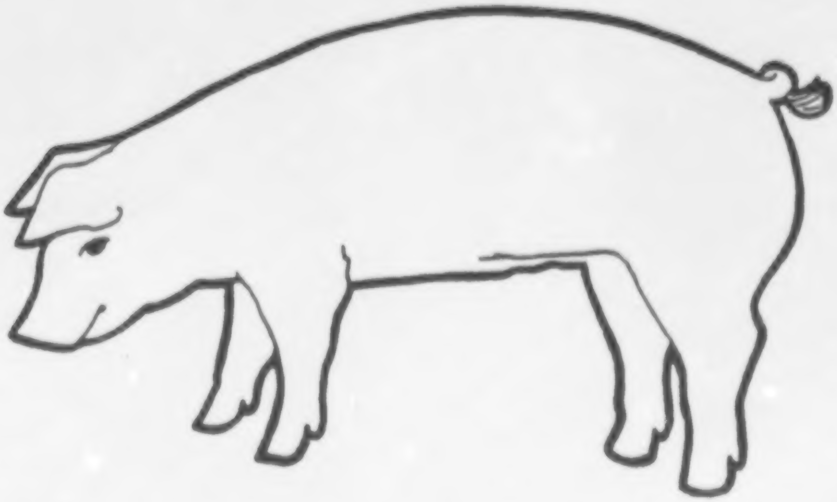
5. Label the drawing below showing the life cycle of the cattle grub.



A. ______________________ C. ______________________

B. ______________________ D. ______________________

6. Draw the cycle of the Swine Large Intestinal Roundworm.



7. Name the changes in the life cycle of the horn fly.

   a.

   b.

   c.

8. Complete the following chart:

Parasite	Species Affected	Symptoms	Prevention and Control
Tick			
Lungworm			
Heel Fly			
Horse Fly			
Lice			

PARASITES
UNIT VI

ANSWERS TO TEST

1. a. Parasite - An organism that lives on and gets its food from some other plant or animal
   b. Coccidiosis - A parasite disease caused by protozona organisms known as coccida
   c. Tick - A blood-feeding parasite known to transmit some disease-bearing organisms
   d. External parasite - One that lives on or under the skin
   e. Internal parasite - One that lives within the organs of the body

2. A. Any five of the following:
      1. Practice pasture rotation
      2. Check animals regularly
      3. Treat animals showing signs of parasites
      4. Practice good lot sanitation
      5. Drain wet pasture sites
      6. Graze young animals on clean pasture
   B. Any five of the following:
      1. Keep manure cleaned from barnyards to prevent fly breeding
      2. Spray livestock frequently
      3. Spray livestock housing
      4. Control grubs before they damage the hide
      5. Spray new animals arriving on farm
      6. Check livestock frequently

3. a. E
   b. I
   c. E
   d. E
   e. I
   f. I
   g. E
   h. E
   i. I
   j. E

4. a. Lice
   b. Mite
   c. Screwworm fly
   d. Tick
   e. Heel fly
   f. Horn fly
   g. Barn fly

5. a. Adult lays eggs
   b. Larva enters body
   c. Larva drops to ground
   d. Emerges as adult

6. Instructor should grade according to Transparency 3.

7. a. Adult
   b. Egg
   c. Larva

8.

Parasite	Species Affected	Symptoms	Preventions and Controls
Tick	Cattle, sheep, and swine	Weak, loss of weight, ears droop	Spray and dust frequently
Lungworm	Cattle, sheep, and swine	Coughing, labored breathing, loss of appetite	Good sanitation. Prevent spreading infested manure on pasture.
Heel Fly	Cattle	Swelling in back of animals	Control flies between June and October
Horse Fly	Cattle and horses	Irritation, restlessness, loss of condition, causes anaplasmosis in cattle	No spray available

Lice	Cattle, sheep, and swine	Irritation, restlessness, loss of condition	Spray frequently from October until spring.

BREEDS OF LIVESTOCK
UNIT II

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to describe the various breeds of livestock according to origin, characteristics, and breed associations. This knowledge will be evidenced by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with breeds of livestock to the correct definitions.
2. Describe the major breeds of beef cattle including origin, characteristics, and breed association.
3. Describe the major breeds of swine including origin, characteristics, and breed association.
4. Describe the major breeds of sheep including origin, characteristics, and breed association.
5. Describe the major breeds of dairy cattle including origin, characteristics, and breed association.
6. Describe the major breeds of horses including origin and characteristics.
7. List prominent breeders of livestock in the local area.

BREEDS OF LIVESTOCK
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:
   - A. Provide students with objective sheet.
   - B. Provide students with information sheet.
   - C. Discuss terminal and specific objectives.
   - D. Discuss information sheet.
   - E. Give test.

II. Students:
   - A. Read objectives.
   - B. Study information sheet.
   - C. Write to breed associations for information and present it to the class.
   - D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   - A. Objectives
   - B. Information sheet
   - C. Test
   - D. Answers to test

II. References:
   - A. Instructional Materials for Vocational Agriculture I. College Station, Texas: Teaching Materials Center, Agricultural Education Dept., Texas A & M University.
   - B. Evans, Everett F. and Roy L. Donahue. Exploring Agriculture. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963
   - C. Ensminger, M.E. The Stockman's Handbook. Danville, Illinois: Interstate Printers and Publishers, Inc., 1962
   - D. Bundy, Clarence E. and Ronald V. Diggins. Dairy Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969.
   - E. Bundy, Clarence E. and Ronald V. Diggins. Beef Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971.

F. Bundy, Clarence E. and Ronald V. Diggins. Livestock and Poultry Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1961.

G. Briggs, Hilton M. Modern Breeds of Livestock. New York: Macmillan Co., 1967.

BREEDS OF LIVESTOCK
UNIT II

INFORMATION SHEET

I. Terms and definitions

A. Crossbred breeder - A breeder of livestock producing animals that are the offspring of animals of two different purebreds

B. Purebred breeder - A breeder of animals whose ancestors are all of the same breed (may or may not be pedigreed)

C. Artificial breeding or insemination - Depositing the male semen into the female reproductive tract by artificial means

D. Bloodline - A family or family line of breeding

E. Boar - A mature uncastrated male swine

F. Certified meat sire - Sire of several animals meeting the requirements for certification as established by the breed association

G. Buck or ram - A mature male goat or sheep

H. Bull - The male of the bovine species (cattle)

I. Calf - An animal of the bovine species under one year of age and of any sex

J. Castration - Removal of the testicles of a male animal

K. Commercial breeder - A breeder of animals for the commercial markets

L. Cow - A female of the bovine species that shows evidence of having produced one or more calves

M. Ewe - A female sheep

N. Full-blood - A purebred animal

O. Get - The offspring of any animal, usually the sire

P. Gilt - A young female swine that has not reproduced

Q. Heifer - A female bovine that has not borne an offspring

R. Springer - A cow showing signs of pregnancy

S. Heiferette - A cow that has produced an offspring but retained the appearance of a heifer

T. Mutton - A sheep or goat over one year of age that was castrated while a lamb

U. Pedigree - A table presenting a line of ancestors for an animal

V. Sow - A mature female swine that has produced a litter of pigs

W. Wether - A castrated male lamb under one year of age

X. Stag - A male animal castrated after reaching sexual maturity

Y. Barrow - A male swine that has been castrated at an early age

Z. Steer - A male bovine animal that has been castrated at an early age

AA. Freemartin - The female twin of a fraternal set of twins which cannot reproduce

BB. Mare - A sexually mature female horse showing evidence of having one or more foals

CC. Foal - The offspring of a mature female equine; either sex

DD. Gelding - A castrated male horse usually over two years of age

EE. Stallion or stud - A sexually mature uncastrated male horse

FF. Filly - A sexually immature female horse over one year of age

II. Major breeds of beef cattle (Instructor should stress the most common)

Breed	Country of origin	Mature size Bull	Cow	Color Horned (H) or polled (P)
Aberdeen Angus	Scotland	1700	1200	Black P
Barzona	Arizona, USA	1800	1200	Dark red H
Beefmaster	Texas, USA	2200	1750	Red H
Blonde d'Aquitaine	France	2200	1500	Fawn H
Brahman	India	1500	1100	Gray-white H with hump
Brangus	Oklahoma, USA	1500	1300	Black, slight crest over back P
Charolais	France	2400	1600	White or cream H & P

Breed	Country of origin	Mature size Bull	Cow	Color Horned (H) or polled (P)
Devon	England	2100	1500	Red H
Galloway	Scotland	1500	1300	Black, long curly hair P
Gelbvieh	Germany	2300	1500	Reddish-fold H
Hereford	England	1900	1300	Red White face H
Limousin	France	2100	1300	Reddish-gold H
Maine Anjou	France	2600	1800	Red with white spots or roan H
Marchigiana	Italy	2700	1700	Gray, dark skin H
Murray Grey	Australia	1900	1300	Smoky gray P
Normade	France	2500	1600	Black with white markings H
Norwegian Red	Norway	2400	1300	Red with white markings H
Pinzgauer	Austria	2100	1400	Brown or black with white topline and underside H
Polled Hereford	Iowa, USA	2100	1400	Red white face P
Red Angus	Scotland	1800	1300	Solid red P
Red Poll	England	1800	1150	Red P
Santa Gertrudis	Texas, USA	1700	1200	Dark cherry red H
Scotch Highland	Scotland	1600	1100	Brown, black or red H
Simmental	Switzerland	2400	1600	Cream to red with white face and spot H
Shorthorn	England	1700	1200	Red, roan, or white H & P
Welsh Black	England	1900	1100	Black H

III. Major breeds of swine (Instructor should stress the most common)

A. Duroc

1. Origin - New England States (Developed in Corn Belt)
2. Breed association - United Duroc Record Association, 239 North Monroe Street, Peoria, Illinois
3. Characteristics - Red (may vary from light golden to very dark red color), medium length and slightly dished face, ears are drooped

B. Hampshire

1. Origin - Kentucky
2. Breed association - Hampshire Swine Registry, 1111 Main Street, Peoria, Illinois
3. Characteristics - Black with white belt encircling the shoulders, white front feet and legs, erect ears

C. Poland China

1. Origin - Ohio
2. Breed association - Poland China Record Association, 501 Losey Street, Galesburg, Illinois
3. Characteristics - Black, six white points (feet, nose, tail), drooping ears

D. Spotted Poland China

1. Origin - Ohio
2. Breed association - National Spotted Poland China Record, 8180 Rosemeade Lane, Indianapolis, Indiana
3. Characteristics - Spotted, fifty percent white and fifty percent black, drooping ears

E. Chester White

1. Origin - Pennsylvania
2. Breed association - Chester White Swine Record Association, Rochester, Indiana
3. Characteristics - White, drooping ears

F. Yorkshire

1. Origin - England
2. Breed association - American Yorkshire Club, Lafayette, Indiana
3. Characteristics - White, erect ears

G. Berkshire

1. Origin - England
2. Breed association - American Berkshire Association, 610 West Monroe Street, Springfield, Illinois
3. Characteristics - Black, six white points (feet, face, tail), erect ears, short snout

(NOTE: Several new breeds have been imported and/or developed such as Landrace, Tamworth, and Hereford. They have not gained the popularity as the breeds listed. Many have been developed by crossbreeding such as Minnesota #1, Minnesota #2, Montana #1, Palouse, and the Beltsville lines.)

IV. Major breeds of sheep (Instructor should stress the most common)

Classification	Breed	Country of Origin	Approx. date of Origin	Color Traits	Horns
Fine wool	Rambouillet	France	1786	White	Rams only
	Merino	Spain	Early	White	Rams only
	Debouillet	USA	1920	White	Rams only
Meat, Med. wool	Suffolk	England	Early 19th century	Black face & legs	Polled
	Hampshire	England	Early 19th century	Black face & legs	Polled
	Shropshire	England	1860	Black face & legs	Polled
	Southdown	England	Late 18th century	Brown face & legs	Polled
	Dorset	England	About 1815	White face & legs	Polled & Horned
	Chevoit	England	End of 18th century	White face & legs	Polled
	Oxford	England	1836	Brown face & legs	Polled
	Tunis	N. Africa	Ancient	Red or tan face	Polled
	Corriedale	New Zealand	1880-1910	White	Polled
	Columbia	USA	1912	White	Polled
	Panama	USA	1912	White	Polled
	Targhee	USA	1927	White	Polled
	Romeldale	USA	1915	White	Polled
	Montadale	USA	1933 on	White	Polled
Long-wool	Romney	England	Early	White	Polled
	Lincoln	England	Early	White	Polled
	Leicester	England	1755-90	White	Polled
	Cotswold	England	Early	White	Polled
Carpet-wool mixed wool fur	Scottish Blackface	Scotland	Early	Black face & legs	Rams & Ewes
	Navajo	USA	Early	Variable	Rams & Ewes Polled & Horned
	Karakul	Asia	Ancient	Black, brown	Rams only

V. Major breeds of dairy cattle

A. Holstein

1. Origin - Holland
2. Breed association - Holstein-Friesian Association of America, Box 808, Brattleboro, Vermont 05301
3. Characteristics - Black and white and white switch; adult weight: female in milk 1500#, bull 2000#; leads other breeds in milk production; butterfat test 3.5%

B. Guernsey

1. Origin - Guernsey Island (coast of France)
2. Breed association - American Guernsey Cattle Club, Peterborough, New Hampshire 03458
3. Characteristics- Light fawn to almost red; white markings on face, legs, switch, and flanks; adult weight: female in milk 1100#, bulls 1700#; milk production less than Holstein; butterfat test 5%

C. Jersey

1. Origin - Jersey Island (English Channel)
2. Breed association - American Jersey Cattle Club, 1521 East Brood Street, Columbus, Ohio 43205
3. Characteristics - Light fawn to black, white spotted to solid; adult weight: female in milk 1000#, bulls 1500#; butterfat test 5.3%

D. Ayrshire

1. Origin - Scotland
2. Breed association - Ayrshire Breeders' Association, Brandon, Vermont 05733
3. Characteristics - Red with white markings or white with red markings; adult weight: female in milk 1250#, bulls 1800#; production lower than other breeds; butterfat test 4.0%

E. Brown Swiss

1. Origin - Switzerland
2. Breed association - Brown Swiss Cattle Breeders' Association of America, Box 1019, Beloit, Wisconsin 53511
3. Characteristics - Light fawn to black; black nose, tongue, switch, and horn tips; largest, most rugged breed; adult weight: female in mild 1400#, bulls 1900#; butterfat test 4.0%

(NOTE: Several breeds are considered to be dual-purpose (beef and dairy) breeds. They are Milking Shorthorn, Red Poll and Devon.
In milk means normal condition after cow has been lactating 3 to 6 months.)

VI. Major Breeds of Horses

Breed	Origin	Characteristics
Appaloosa	Introduced to Mexico by Spanish explorers	Combination of colors and spots, eye encircled by white, mottled skin, hoofs black & white; weight 1000 to 1200 lbs.
Arabian	Arabia	Colors: Bay, gray, and chestnut are predominant,dished face, predominant neck; weight 850-1100 lbs.
Morgan	Eastern USA	Colors: Bay, brown, black, and chestnut with white markings predominant neck and barrel; weight 800-1200 lbs.
Palomino	Spain	Golden & white, silver or ivory mane and tail; weight 1000 to 1200 lbs.
Pinto	Spain	Half color or colors (bay, brown, black) and half white spots ranging from 2 to 12 inches across.
Quarter Horse	Texas	Chestnut, sorrel, bay, dun, palomino, black, brown, roan; weight 1050-1300 lbs.
Shetland Pony	Shetland Islands	All horse colors, height 10-11 hands; weight 300-600 lbs.
Thoroughbred	England	Bay, brown, chestnut, sorrel, black, and gray; Height 15-17 hands; weight 900-1400 lbs.

VII. Local prominent breeders of livestock (to be completed by instructor)

a.

b.

c.

BREEDS OF LIVESTOCK
UNIT II

TEST

1. Match the terms on the right with the correct definition.

_____a. A family or family line of breeding

_____b. The male of the bovine species (cattle)

_____c. Removal of the testicles of a male animal

_____d. A breeder of animals for the commercial markets

_____e. Depositing the male seman into the female reproductive tract by artificial means

_____f. A mature male goat or sheep

_____g. An animal of the bovine species under one year of age and of any sex

_____h. A female sheep

_____i. A breeder of animals whose ancestors are all of the same breed (may or may not be pedigreed)

_____j. Sire of several animals meeting the requirements for certification as established by the breed association

_____k. A young female swine that has not reproduced

_____l. A table presenting a line of ancestors for an animal

_____m. A male bovine animal that has been castrated at an early age

1. Crossbred
2. Purebred breeder
3. Artificial breeding or insemination
4. Bloodline
5. Boar
6. Certified meat sire
7. Buck or ram
8. Bull
9. Calf
10. Castration
11. Commercial breeder
12. Cow
13. Freemartin
14. Ewe
15. Full-blood
16. Get
17. Gilt
18. Mare
19. Heifer
20. Springer
21. Heiferette
22. Foal
23. Mutton
24. Pedigree
25. Sow
26. Gelding
27. Wether
28. Stallion or stud
29. Stag

_____n. A breeder of livestock producing animals that are the offspring of animals of two different purebreds

_____o. A mature uncastrated male swine

_____p. The offspring of any animal, usually the sire

_____q. A mature female swine that has produced a litter of pigs

_____r. A male swine that has been castrated at an early age

_____s. A female of the bovine species that shows evidence of having produced one or more calves

_____t. A sheep or goat over one year of age that was castrated while a lamb

_____u. A male bovine animal castrated after reaching sexual maturity

_____v. A purebred animal

_____w. A cow that has produced an offspring but retained the appearance of a heifer

_____x. A castrated male lamb under one year of age

_____y. A cow showing signs of pregnancy

_____z. A female bovine that has not borne an offspring

_____aa. A sexually immature female horse over one year of age

_____bb. The offspring of a mature female equine; either sex

_____cc. The female twin of a fraternal set of twins which cannot reproduce

30. Barrow
31. Steer
32. Filly

dd. A sexually mature uncastrated male horse

ee. A sexually mature female horse showing evidence of having one or more foals

ff. A castrated male horse usually over two years of age

2. Describe the major breeds of swine given below by including origin, characteristics, and breed association.

	Breed	Origin	Characteristics	Breed Association
a.	Hampshire			
b.	Duroc			
c.	Berkshire			
d.	Chester White			
e.	Yorkshire			

3. Describe the major breeds of beef cattle given below by including origin, characteristics (color, horned or polled), and approximate mature weight

Breed	Origin	Characteristics	Approximate weight	
			Bull	Cow
a. Hereford				
b. Charolais				
c. Shorthorn				
d. Aberdeen Angus				

4. Describe the major breeds of sheep given below by including origin, characteristics (color traits and horns), and type of wool.

Breed	Origin	Characteristics	Type of wool
a. Hampshire			
b. Suffolk			
c. Dorset			
d. Rambouillet			

5. Describe the major breeds of dairy cattle given below by including origin, characteristics, and breed association.

	Breed	Origin	Characteristics	Breed Association
a.	Holstein			
b.	Jersey			
c.	Aryshire			

6. Describe the major breeds of horses given below by, including origin, breed and characteristics (colors, markings, & weight)

	Breed	Origin	Characteristics
a.	Appaloosa		
b.	Quarter Horse		
c.	Thoroughbred		

7. List prominent breeders of livestock in your local area.

BREEDS OF LIVESTOCK
UNIT II

ANSWERS TO TEST

1. a. 4
b. 8
c. 10
d. 11
e. 3
f. 7
g. 9
h. 14
i. 2
j. 6
k. 17
l. 24
m. 31
n. 1
o. 5
p. 16
q. 25
r. 30
s. 12
t. 23
u. 29
v. 15
w. 21
x. 27
y. 20
z. 19
aa. 32
bb. 22
cc. 13
dd. 28
ee. 18
ff. 26

2.	Breed	Origin	Characteristics	Breed Association
a.	Hampshire	Kentucky	Black with white belt around shoulders, white front feet and legs, erect ears	Hampshire Swine Registry
b.	Duroc	New England States	Red (may vary from light to golden to dark red color), medium length and slightly dished face, ears are drooped	United Duroc Record Association
c.	Berkshire	England	Black, six white points, short snout, erect ears	American Berkshire Association
d.	Chester White	Penn.	White, drooping ears	Chester White Swine Record Association
e.	Yorkshire	England	White, erect ears	American Yorkshire Club

3.	Breed	Origin	Characteristics	Approximate weight Bull Cow
a.	Hereford	England	Red with white face, horned	1900--Bull 1300--Cow
b.	Charolais	France	White to cream, horned or polled	2400--Bull 1600--Cow
c.	Shorthorn	England	Red, roan, or white, horned or polled	1700--Bull 1200--Cow
d.	Aberdeen Angus	Scotland	Black, polled	1700--Bull 1200--Cow

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4.	Breed	Origin	Characteristics	Type of wool
a.	Hampshire	England	Polled, black face, and legs	Medium
b.	Suffolk	England	Polled, black face, and legs	Medium
c.	Dorset	England	Horned or polled; white face and legs	Medium
d.	Rambouillet	France	White, ewes polled, rams polled, or horned	Fine

5. Breed	Origin	Characteristics	Breed Association
a. Holstein	Holland	Black and white and white switch; adult weight: female of America in milk 1500#, bulls 2000#; leads all breeds in milk production; butterfat test 3.5%	Holstein-Friesian Association of America
b. Jersey	Jersey Island	Light fawn to black, white spotted to solid; adult weight: female in milk 1000#, bulls 1500#; butterfat test 5.3%	American Jersey Cattle Club
c. Aryshire	Scotland	Red with white markings or white with red markings; adult weight: female in milk 1250#, bulls 1800#, production less than other breeds; butterfat test 4.0%	Aryshire Breeders' Association

6.	Breed	Origin	Characteristics
a.	Appaloosa	Introduced to Mexico by Spanish explorers	Combination of colors and spots, eye encircled by white, mottled skin hoofs black & white; weight 1000-1200 lbs.
b.	Quarter Horse	Texas	Chestnut, sorrel, bay, dun, palomino, black, & roan; weight 1050-1300 lbs.
c.	Thoroughbred	England	Bay, brown, chestnut, sorrel, black & gray; weight 900-1400 lbs.

7. To be completed by instructor

LIVESTOCK SELECTION
UNIT III

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to identify the parts of beef, sheep, swine, and dairy animals and the whole sale cuts of a carcass for pork, lamb, and beef. He should also be able to select desirable livestock adaptable to his home farm and community and present a set of reasons for placing a class of animals. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with livestock selection to the correct definition.
2. List the three steps in the livestock selection process.
3. Identify the parts of beef, swine, sheep, dairy, and horse animals.
4. Identify desirable and undesirable beef, sheep, swine, and dairy animals.
5. Identify the wholesale cuts of beef, pork, and lamb.
6. Match approximate percentage of yield of wholesale cuts to that cut on a carcass for beef, pork, and lamb.
7. Write ten comparative advantage terms and ten criticism terms used in livestock selection.
8. Present a set of reasons for livestock either written or orally.

LIVESTOCK SELECTION
UNIT III

SUGGESTED ACTIVITIES

Instructor:

1. Provide each student with objective sheet
2. Provide each student with information sheet
3. Make transparencies
4. Discuss terminal and specific objectives
5. Discuss information sheet
6. Give test

Student:

1. Read objectives
2. Study information sheet and take notes
3. Demonstrate to the instructor the ability to select animals by using picture judging sets or by taking field trip
4. Take test

INSTRUCTIONAL MATERIALS

Included in this unit:

1. Objectives
2. Information Sheet
3. Transparency masters
    - TM 1--Parts of a Beef Animal
    - TM 2--Parts of a Swine
    - TM 3--Parts of a Sheep
    - TM 4--Parts of a Dairy Cow
    - TM 5--Parts of a Horse
    - TM 6--Desirable and Undesirable Beef Animals (Side View)
    - TM 7--Desirable and Undesirable Beef Animals (Rear View)
    - TM 8--Desirable and Undesirable Barrows (Side View)
    - TM 9--Desirable and Undesirable Lambs (Side View)
    - TM 10--Desirable and Undesirable Dairy Cows (Side View)
    - TM 11--Desirable and Undesirable Dairy Cows (Body Capacity and Udder and Rear Attachment)
    - TM 12--Wholesale Cuts of Beef
    - TM 13--Wholesale Cuts of Pork

TM 14--Wholesale Cuts of Lamb
TM 15--Approximate Yield Percentage of a Beef Carcass
TM 16--Approximate Yield Percentage of a Swine Carcass
TM 17--Approximate Yield Percentage of a Lamb Carcass

4. Test
5. Answers

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7. Pinney, D.O. Handbook of Livestock Evaluation. Stillwater, Oklahoma: Oklahoma State University, 1969.

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LIVESTOCK SELECTION
UNIT III

INFORMATION SHEET

I. Terms and definitions

A. Type--General term commonly defined as a combination of characteristics which make an animal most useful for a specific purpose

(NOTE: Type is determined by the general form or shape of an animal.)

B. Balance of symmetry--Proper proportions and blending of parts

C. Meatiness or muscling--High proportion of volume in the areas of the high priced cuts

D. Quality--Overall smoothness, blending of shoulders, and refinement of head and bone

E. Trimness--Freedom of excess finish or fat

F. Tight-framed--Ability of an animal to "hold itself together" as indicated by strength of top, tightness of shoulders, and squareness of feet and leg placement

G. Soundness--Quality of being correct on the feet and legs as opposed to unsound

(NOTE: This is used primarily with breeding stock.)

H. Constitution--Evidence of vigor or "doing ability" denoted by depth and fullness of heart, spring or ribs, and width of chest floor, and substance of bone

I. Growthiness--Condition of having size and weight for age

J. Scale--Size of the animal as determined by skeletal structure

(NOTE: This should be independent of weight.)

K. Ruggedness--Quality of having large bones and frame

L. Broodiness--Combination of characteristics which indicate the female will be a good mother

(NOTE: This is used only with breeding stock.)

M. Breed character--Traits which denote one breed from another

(NOTE: Refers to characteristics of head, such as shape, length, and dish of face, width of muzzle, shape of poll, set of ear, color markings and wool covering in sheep.)

N. Sex character (breeding stock only)

1. Femininity--Traits distinguishing a female from a male

(NOTE: Femininity is indicated by refinement of head, neck, and shoulders.)

2. Masculinity--Traits distinguishing a male from a female

(NOTE: Masculinity is indicated by strength of jaw, and muzzle, boldness and massiveness of the head, crest, thickness of neck, and overall development of forequarters.)

II. Steps in the livestock selection process

A. Know the parts of the live animal

B. Know the wholesale cuts of the animal

C. Know what an ideal animal looks like

III. Parts of the beef, swine, sheep, and dairy animals

A. Beef (Transparency 1)

1. Poll
2. Neck
3. Crops
4. Back
5. Loin
6. Hooks
7. Rump
8. Tail head
9. Quarter
10. Stifle
11. Hock
12. Shank (cannon bone)
13. Hoof
14. Flank
15. Last rib (13th)
16. Ribs
17. Sheath
18. Underline
19. Fore flank
20. Shank
21. Dewclaw
22. Coffin
23. Pastern
24. Fetlock
25. Knee
26. Elbow
27. Brisket
28. Shoulder
29. Dewlap
30. Shoulder vein
31. Muzzle
32. Nostril
33. Nose
34. Face
35. Forehead
36. Body

B. Swine (Transparency 2)

1. Nostril
2. Snout
3. Ear
4. Poll
5. Neck
6. Shoulder
7. Back
8. Loin
9. Rump (hip)
10. Tail
11. Ham
12. Stifle
13. Hock
14. Hindleg
15. Dewclaw
16. Hind flank
17. Side
18. Sheath
19. Belly
20. Fore flank
21. Knee
22. Foreleg
23. Coffin
24. Pastern
25. Fetlock
26. Jowl
27. Cheek

C. Sheep (Transparency 3)

1. Mouth
2. Nose
3. Face
4. Forehead
5. Poll
6. Neck
7. Top of shoulder
8. Back or rack
9. Loin
10. Ribs
11. Rump
12. Hip
13. Dock
14. Leg of lamb
15. Stifle
16. Hock
17. Cannon bone
18. Hoof
19. Rear flank
20. Last rib
21. Belly
22. Body
23. Fore flank
24. Coffin
25. Pastern
26. Fetlock
27. Knee
28. Fore shank
29. Elbow
30. Breast
31. Shoulder

D. Dairy cattle (Transparency 4)

1. Muzzle
2. Nostril
3. Nose
4. Face
5. Forehead
6. Poll
7. Horn
8. Neck
9. Withers
10. Crops
11. Back
12. Chine
13. Loin
14. Ribs
15. Hip
16. Rump
17. Thurl
18. Tail head
19. Pin bones
20. Rear udder attachment
21. Thigh
22. Stifle
23. Hock
24. Switch
25. Dewclaw
26. Hoof
27. Teats
28. Udder
29. Flank
30. Mammary veins
31. Barrel
32. Coffin
33. Pastern
34. Fetlock
35. Knee
36. Elbow
37. Brisket
38. Heart girth
39. Shoulder
40. Dewlap

E. Horse (Transparency 5)

1. Forehead
2. Face
3. Bridge of nose
4. Nostril
5. Muzzle
6. Upper lip
7. Lower lip
8. Under lip
9. Throat latch
10. Poll
11. Crest
12. Neck
13. Point of shoulder
14. Chest
15. Arm
16. Elbow
17. Forearm
18. Knee
19. Cannon
20. Ankle
21. Pastern
22. Coronet
23. Fetlock
24. Girth
25. Shoulder
26. Barrel
27. Abdomen
28. Hoof
29. Hock
30. Gaskin
31. Stifle
32. Flank
33. Buttock
34. Point of hip
35. Croup
36. Loin
37. Back
38. Withers
39. Thigh

IV. Desirable and undesirable animals

A. Beef (Transparencies 6 and 7)

B. Swine (Transparency 8)

C. Sheep (Transparency 9)

D. Dairy (Transparencies 10 and 11)

V. Wholesale cuts of beef, pork, and lamb

A. Beef (Transparency 12)

1. Chuck
2. Rib
3. Loin
4. Rump
5. Round
6. Shank
7. Flank
8. Plate
9. Fore shank
10. Brisket

a. The average dressing percentage of a beef animal is 55% of the live weight.

b. The four primal cuts of the beef carcass are:

1) Round

2) Loin

3) Rib

4) Chuck

These cuts make up 70-75% of the carcass weight.

c. The wholesale cuts of the forequarter are:

1) Rib

2) Plate

3) Chuck

4) Brisket

5) Shank

52% of the carcass

d. The wholesale cuts of the hindquarter are:

1) Round

2) Loin

3) Flank

4) Kidney Knob

48% of the carcass

B. Pork (Transparency 13)

1. Jowl
2. Boston Butt
3. Back
4. Loin
    a. The average dressing percentage of swine is 72-75%
    b. The hog carcass is not divided into quarters as was the beef carcass
5. Rump
6. Picnic
7. Side
8. Ham

C. Lamb (Transparency 14)

1. Leg
2. Sirloin
3. Loin
4. Rack
    a. The average dressing percentage of lamb is 52%
    b. The lamb carcass is divided into the fore and hind saddle
    c. Both the fore and the hind saddle make up 50% of the carcass
5. Shoulder
6. Fore shank
7. Breast

IV. Approximate yield percentage of a beef, lamb, and pork carcass

A. Beef (Transparency 15)

1. Brisket--5%
2. Chuck--26%
3. Shank--4%
4. Rib--9%
5. Plate--8%
6. Short loin--8%
7. Flank--5%
8. Sirloin--9%
9. Round--23%

B. Pork (Transparency 16)
  1. Jowl--3%
  2. Boston butt--6.5%
  3. Picnic--8.5%
  4. Loin--15%
  5. Spareribs--3%
  6. Side--17.5%
  7. Ham--18.5%

C. Lamb (Transparency 17)
  1. Shoulders--24%
  2. Shank--4%
  3. Ribs--12%
  4. Flank and breast--13%
  5. Loin--11%
  6. Leg with sirloin on--33%

VII. Comparative advantages terms and criticism terms for livestock selection

A. Terms for use in giving reasons on market steers

	Comparative Advantages	Criticisms
1.	General terms	
a.	Meatier, heavier muscled, more muscular, more expression of muscling	Light muscled
b.	More correctly finished	Overfinished, underfinished
c.	Trimmer	Fat, wasty
d.	More modern type	Old-fashioned
e.	Larger framed, more scale	Small framed, lacked scale
f.	More length of leg	Dumpy, short legged
g.	Longer bodied, stretchier	Short bodied, too compact
h.	Nicer balanced, more symmetrical	Poorly balanced
i.	Smoother, higher quality	Rough, low quality, coarse
j.	Straighter lined, tighter framed	Slack framed

2. Conformation

a.	Meatier topped	Narrow
b.	Meatier over the back and/or loin	Narrow over the back and loin
c.	More spring of rib	Flat-ribbed, narrow through fore-ribs
d.	Fuller through the crops	Narrow over crops
e.	Stronger top	Weaker topped, down in top
f.	Straighter top	High over loin, low behind shoulders
g.	Longer rump	Short rump
h.	Leveler rump	Droopy in the rump
i.	Thicker, meatier rump	Tapered or narrow rump
j.	Heavier, plumper, more bulging, meatier, more muscular, deeper, thicker quarter	Light, flat, shallow narrow quarter
k.	Heavier muscled, more bulging, meatier in the stifle region	Lacks bulge or muscling through stifle
l.	Trimmer middled	Heavy or wasty middled
m.	Trimmer fronted (trimmer in brisket and dewlap)	Heavy fronted (or in brisket and/or dewlap)
n.	Wider fronted (wider through chest floor)	Narrow fronted
o.	Stands wider behind (or in front)	Stands close behind (or in front)

3. Finish

a.	Trimmer finished	Fat, wasty, overfinished
b.	Trimmer flank, brisker, over ribs	Wasty flank
c.	More correctly finished steer	Was overfinished, or underfinished
d.	More uniformly finished	Patchy finish
e.	Smoother finished	Patchy finish
f.	Firmer finished	Soft finish

4. Quality

a.	Smoother fleshed, higher quality, freer of patchiness	Rough, low quality
b.	Straighter lined (top and bottom)	Slack framed, weak topped
c.	Smoother about hooks	Hooky or rough about hooks
d.	Smoother laid in at shoulders (nicer blending of neck and shoulders)	Rough, coarse, or wing-shouldered
e.	Smoother (neater) about tail head	Rough, patchy, or prominent about tail head
f.	Smoother finish	Rough, patchy finish
g.	Trimmer middled	Heavy, wasty middled

5. Carcass
   - a. Would yield a meatier carcass
   - b. Would hang up a beefier, thicker heavier muscled carcass
   - c. Would yield a carcass with a high cutability
   - d. Would yield a trimmer more desirable finished carcass with less fat trim
   - e. Would yield a carcass with a higher percent of trimmed retail cuts

B. Terms for use in giving reasons on breeding cattle

1. General terms--Same as for steers (emphasize correctness, balance, quality, and straightness of lines)

	Comparative Advantages	Criticisms
a.	More correct structurally (on feet and legs and skeletally)	Lacked correctness
b.	Larger, growthier	Small
c.	Larger framed, more scale	Small framed, lacked scale
d.	Longer bodied, stretchier	Short bodied, old-fashioned
e.	More rugged (use with bulls)	Lacked ruggedness
f.	More constitution	Lacked constitution

2. Conformation--Same terms as given for steers
3. Finish--Do not use the word "finish" on breeding cattle
(NOTE: Trimness is certainly desirable in breeding cattle.)
4. Quality--Same as for steers
5. Correctness or soundness of feet and legs

	Comparative Advantages	Criticisms
a.	Sounder, more correct	Unsound, lacked correctness
b.	Stood more correctly or straighter on rear legs as viewed from rear	Bowlegged (out at the hocks), cow-hocked (stood close at the hocks)
c.	Stood more correctly on rear legs as viewed from side, more desirable set to the hocks	Sickle-hocked (too much set to hocks), post-legged (too straight in the hocks)
d.	Stood straighter on front legs as viewed from side	Over at the knees (buck-kneed), back at the knees (calf-kneed)
e.	Stood wider in front	Stood close at the knees (knock-kneed) or narrow fronted
f.	Stood straighter in front	Toed in or toed out
g.	More substance of bone, was heavier boned, had more rugged bone	Fine boned or light boned
h.	Higher quality, cleaner, flatter bone	Coarse, low quality boned
i.	Stood on stronger pasterns (front and/or rear)	Weak in the pasterns
j.	Nicer (freer, easier, more correct) walking (or moving)	Poor walking, stiff, short strided, spraddles, walks under, knuckles over

6. Breed and sex character

	Comparative Advantages	Criticisms
a.	More (Angus, Hereford, Shorthorn) breed character about head	Plain headed
b.	More feminine about head, cleaner, more refined about head and neck (heifers)	Coarse, lacked femininity

d.	More masculine, burlier about head and neck (bulls)	Lacked masculinity

C. Terms for use in giving reasons on market barrows

1. General terms

	Comparative Advantages	Criticisms
a.	Meatier, heavier muscled more muscular, more expression of muscling	Light muscled
b.	Longer, longer sided stretchier	Short, short sided
c.	Trimmer (cleaner)	Wasty, overfinished
d.	Firmer	Soft, flabby
e.	More correctly (desirable) finished	Overfinished
f.	Nicer balanced, more symmetrical	Poorly balanced
g.	Smoother, higher quality	Low quality
h.	Tighter framed	Slack framed
i.	More scale	Short legged, dumpy
j.	More substance	Fine boned

2. Conformation

	Comparative Advatages	Criticisms
a.	Trimmer, cleaner and/or firmer in jowl	Heavy, wasty jowled
b.	Cleaner or trimmer about neck	Thick, coarse, wasty through neck
c.	Smoother laid in at shoulders neater in shoulders	Rough, coarse, open about shoulders
d.	Bolder, fuller, more spring of rib	Flat-ribbed, lacked spring of rib
e.	Longer, smoother sided	Short, wrinkled in side
f.	Meatier and/or more muscular over shoulders, back, loin, and rump, more natural thickness and musculing over back, loin, and rump	Narrow, light muscled over shoulders

g.	More expression of muscling over the top	Light muscled
h.	More uniformly turned in arch	Uneven in arch (low behind shoulders, steep rump)
i.	Stronger top	Weak top or arch
j.	Cleaner over the loin edge	Too much right angle spread
k.	Longer in the rump (longer hammed or hooks up higher in the ham)	Short rumped (or short hammed)
l.	Meatier in the rump or more flare of rump	Tapered or narrow through rump
m.	Higher tail setting	Low tail setting, steep in the rump
n.	Heavier, plumper, more bulging, fuller, meatier, more muscular, deeper, thicker ham	Light, flat, light-muscled, narrow
o.	Trimmer, firmer, freer of wrinkles about base of ham (or through crotch of ham)	Wasty, soft, wrinkled about base of ham
p.	Deeper ham	Shallow, cut up in ham
q.	More bulge through stifle (or lower ham or base of ham)	Narrow through stifle or base of ham
r.	More flare through the rump or ham	Narrow through rump or ham
s.	Plumper, fuller through cushion of ham	Narrow through cushion of ham
t.	Stood wider behind (or in front)	Stood narrow behind (or in front)
u.	More length of leg	Short legged

3. Finish

	Comparative Advantages	Criticisms
a.	Trimmer (cleaner), more desirably (or correctly) finished	Wasty, overfinished
b.	Firmer	Soft
c.	Cleaner top	Too much finish down top, right angle spread over top
d.	Firmer, cleaner, or freer of waste over shoulders, shoulders pocket, through side and base of ham and jowl	Soft, wasty, wrinkled over shoulders

e. Trimmer, firmer in underline	Soft, wasty in the underline

4. Quality

Comparative Advantages	Criticisms
a. Smoother, freer of wrinkles over shoulders and through side and base of ham	Wrinkled over shoulders
b. Neater laid in at shoulders	Rough, coarse, open in shoulders
c. Trimmer middle, trimmer underline	Wasty, heavy middled, or wasty underline
d. Cleaner, more refined about head and ear	Coarse, large head and/or ear

5. Carcass

Comparative Advantages	Criticisms
a. Would yield (or hand up) a meatier, heavier muscled carcass with a higher percent of the lean cuts or ham and loin	
b. Would yield a meatier, trimmer carcass with a higher ration of lean to fat	
c. Would yield a trimmer, meatier carcass with less fat trim (or backfat)	
d. Would hang up a trimmer, less wasty carcass	
e. Would hang up a longer, trimmer carcass	

D. Terms for use in giving reasons on breeding gilts

1. General terms (same as for barrows)

Comparative Advantages	Criticisms
a. More correct (on feet and legs	Lacked correctness
b. Larger, growthier	Small
c. Larger framed, more scale	Small framed, lacked scale
d. More length of leg	Short legged
e. Broodier (as shown by depth of side, roominess of middle, and underline	Lacked broodiness

f. More rugged with more constitution (width of chest floor, depth heart, spring of rib)	Lacked ruggedness or constitution

2. Conformation--Same terms as for barrows

3. Finish--"Finish" is not mentioned in gilt or boar reasons

   (NOTE: "Trimness" and "firmness" are certainly desired and are used in reasons terminology as a barrow terminology.)

4. Quality--Same as for barrows

   (NOTE: Do not criticize gilts for a small amount of middle.)

5. Correctness or soundness of feet and legs

Comparative Advantages	Criticisms
a. Straighter front (or hind) legs as viewed from side (or behind)	Bowlegged (out at hocks), cow-hocked, sickle-hocked, over at knees (buck-kneed)
b. Stood wider in front	Stood close at knees (knock-kneed) or close in front
c. Stood straighter in front	Toed out, toed in front
d. Stood on straighter, stronger rear (or front) pasterns	Weak pasterns (front or rear)
e. Stood on more substance of bone, was heavier boned, had more rugged bone	Fine boned or light boned
f. Stood on higher quality, cleaner bone	Coarse, low quality bone
g. Nicer (freer, easier, more correct) walking (or moving) gilt	Poor, stiff walking gilt

6. Breed and sex character

Comparative Advantages	Criticisms
a. Broodier about the underline	Lacks broodiness and/or prominence
b. More prominent about the underline	Lacked prominence (or development) of underline, has inverted nipples
c. Large number of nipples	Lacked number of nipples
d. More evenly spaced nipples or underline	Poor spacing of underline

e.	Sounder underline	Unsound in the underline

E. Terms for use in giving reasons on market lambs

1. General terms

	Comparative Advantages	Criticisms
a.	Meatier, heavier muscled more muscular, more expression of muscling	Light muscled
b.	Thicker, meatier topped	Narrow
c.	More desirably finished	Overfinished, underfinished
d.	Trimmer	Wasty, fat
e.	More modern type	Old-fashioned
f.	More length of leg	Short legged, dumpy
g.	Longer bodied	Short bodied, too compact
h.	Nicer balanced, more symmetrical	Poorly balanced
i.	Firmer, harder handling	Soft
j.	Straighter lined, tighter framed	Slack framed
k.	Smoother, higher quality	Rough, low quality, coarse

2. Conformation

	Comparative Advantages	Criticisms
a.	Wider (thicker and/or meatier topped	Narrow
b.	More natural thickness and muscling over the top, wider (thicker and/or meatier) over rack, back, and loin	Narrow over rack
c.	More spring of rib	Flat-ribbed, narrow through fore-rib
d.	Straighter, stronger, firmer top	Weak topped, down in top
e.	Longer rump	Short rumped
f.	Leveler rump	Drooping in the rump
g.	Fuller at the dock	Tapered in the dock
h.	Heavier, plumper, more bulging, meatier, more muscular, firmer, deeper, thicker leg	Light, flat, shallow, narrow, soft leg

i. Trimmer middled	Heavy or wasty middled
j. Wider fronted, wider through chest floor or breast	Narrow fronted, narrow chest
k. Stands wider behind (or in front)	Stands close behind (or in front)
l. More length of leg	Dumpy, old-fashioned

3. Finish

Comparative Advantages	Criticisms
a. Trimmer	Fat, wasty, overfinished
b. Trimmer flank, chest, crotch over the ribs	Wasty in the crotch
c. More desirably finished lamb	Was overfinished, or thin, underfinished
d. More uniformly finished (covered)	Lacked uniformity of finish
e. Harder or firmer handling (more desirable handling lamb)	Soft handling lamb

4. Quality

Comparative Advantages	Criticisms
a. Smoother, higher quality	Coarse, low quality
b. Straighter lined (top and bottom)	Slack framed, weak top
c. Smoother, neater in shoulders	Rough, coarse, or wing-shouldered
d. Trimmer middled	Heavy, wasty middled
e. Cleaner, more refined head and/or bone	Coarse about head and/or bone

5. Carcass

Comparative Advantages	Criticisms
a. Would yield a meatier, more muscular carcass	
b. Would hang up a thicker, heavier muscled carcass	
c. Would yield a trimmer, more desirably finished carcass with less fat trim	
d. Would yield a higher percent of leg and loin or trimmer retail cuts	

F. Terms for use in giving reasons on breeding ewes

1. General terms--Same as for market lambs (emphasize balance, quality and straightness of lines.)

Comparative Advantages	Criticisms
a. More correctly structurally (on feet and legs and skeletally)	Lacked correctness
b. Larger, growthier	Small
c. Larger framed, more scale	Small framed, lacking scale
d. Deeper bodied, broodier, roomier middled	Shallow bodied
e. More rugged	Lacked ruggedness and substance
f. Showed more constitution	Lacked constitution

2. Conformation--Same as terms given for market lambs
3. Finish--Same as for market lambs (less emphasis)
4. Quality--Same as for market lambs
5. Correctness or soundness of feet and legs

Comparative Advantages	Criticisms
a. Stood more correctly on feet and/or legs	Lacked correctness
b. Stood more correctly on rear legs as viewed from rear	Bowlegged (out at the hocks), cow-hocked (stood close at the hocks)
c. Stood more correctly or rear legs as viewed from the side, more desirable set to the hocks	Sickle-hocked (too much set to the hocks), post-legged (too straight in the hocks)
d. Stood straighter on front legs as viewed from the side	Over at the knees (buck-kneed), back at the knees (calf-kneed)
e. Stood straighter in front as viewed from the front	Toed out or toed in
f. Stood wider in front	Stood close at the knees (knock-kneed)
g. More substance of bone, was heavier boned, had more rugged bone	Fine boned or light boned

G. Terms for use in giving reasons on dairy cows

1. Mammary system
    a. Stronger fore-udder attachment
    b. More fore-udder attachment
    c. Squarer teat placement
    d. Nicer balanced udder
    e. More rear-udder development
    f. Stronger rear-udder attachment
    g. More veining on the udder indicating an udder of higher quality
    h. Stronger central suspensory membrane
2. General appearance
    a. More breed character in her head and neck
    b. Taller cow with more length and stretch
    c. Stronger in her chine
    d. Stronger in her loin
    e. More level in the rump
    f. Neater in her tail setting
    g. Straighter on her rear legs
3. Body capacity
    a. Deeper in her chest
    b. Deeper in her rear ribs
    c. Longer barrel cow
    d. More spring of rib
4. Dairy character
    a. Sharper in the withers
    b. More lean in the ribs
    c. Longer and more lean in the neck
    d. More lean in the thighs
    e. Sharper in her hips and pins

VIII. Suggestions for oral reasons

A. Oral reasons--Give the opportunity to defend the placing of the class and to specifically tell why each placed as it did

(NOTE: Reasons should be accurate and given in a manner which is easily understood.)

B. Gains from giving reasons

   1. Ability to organize system of analyzing a class of livestock
   2. Ability to think more clearly on your feet
   3. Ability to state thoughts more clearly
   4. Improvement of speaking poise
   5. Improvement of memory

C. Important points in giving reasons

   1. Accuracy--See the obvious and important point in the class and discuss them accurately and completely
   2. Delivery--Present in a manner that is pleasant to hear and clear and easy to follow

      (NOTE: Speak slowly and clearly, in a conversational tone, yet loudly enough to be understood and to give some "conviction" to your reasons. You should stand 6-8 feet from the judge, standing erect, feet slightly spread, and with your hands behind your back. A poor delivery will probably result in a low score regardless of the accuracy of your reasons.)

   3. Bring out the important and general points first; follow with the more specific and detailed points (much like a newspaper story)
   4. Completeness--Bring out all the major differences in your reasons
   5. Length--Should never be over two minutes in length
   6. Terms--Know the meaning of the terms you use

      (NOTE: For the purpose of your reasons, a class of four animals is divided into three pairs: a top pair, a middle pair, and a bottom pair. Follow the basic outline for a set of reasons for a placing of 1-2-3-4.)

      a. Opening remarks

         1) Give name of class and how you placed it
         2) Give criticisms and outstanding good points

            (NOTE: In some cases a general statement about the entire class may be more applicable.)

      b. Top Pair

         1) Give reasons for placing 1 over 2, using comparative terms
         2) Give grants for 2 over 1, using comparative terms to point out advantages of 2 over 1

            (NOTE: In close placings, several grants would be desirable as long as they are true.)

3) Give criticisms of 2, using descriptive terms

(NOTE: Always criticize an animal on its own merits rather than comparing him to the animal placed above him.)

c. Middle pair

1) Give reasons for placing 2 over 3

2) Give grants for 3 over 2

3) Give criticisms of 3

d. Bottom pair

1) Give reasons for placing 3 over 4

2) Give grants for 4 over 3

3) Give criticisms of 4

(NOTE: Do not use a great many terms in close succession. Example: "1 was a typier, thicker quartered steer than 2."

D. Words and phrases that should be avoided

1. Animal or individual--Say "barrow", "gilt","heifer", "mare"

2. It--Always use "he" or "she"

3. I would like to see--Point out the fault directly

4. Lacks or lacked--When possible, point out the fault directly

Example: Instead of saying "4 lacked depth of barrow" it should simply be "smoother barrow"

5. Was a heifer that was

Example: Say "one was a larger heifer

6. I placed the number 1 steer over the number 2 steer

Example: Say "I placed 1 over 2."

7. For these reasons I place this class--Unnecessary statement

(NOTE: Conclude your reasons with the criticisms of the bottom animal.)

E. Sample reasons

1. Hampshire barrows

I placed this class of Hampshire barrows 1-2-3-4. One was the longest sided, trimmest barrow in the class, although I fault him for being weak in his top.

In the top pair I placed one, the off-belt barrow, over two because one was a longer, stretchier barrow that was more correct in his amount of finish than two. One was trimmer in his jowl, firmer and cleaner through his shoulders, and cleaner down his top than two. Also, one was trimmer and firmer through his side and trimmer about his middle than two. Because of one's advantage in trimness he should yield a carcass with a higher percent of lean cuts and less fat trim. I would concede that two was a heavier muscled barrow that had more thickness through the center of his ham than one. However, I fault two, and placed him second for being a short-sided barrow that was wasty through his jowl and shoulders.

In the middle pair I placed two over three because two was a nicer balanced, heavier muscled barrow than three. Two had more natural spread and muscling over his back and loin, was stronger and more evenly turned in his top, and was longer in his rump. Furthermore, two had more flare to his rump and was much wider and meatier through his stifle than three. Also, two stood wider behind and showed more evidence of muscling through his shoulders. Two should hang on the rail a meatier, heavier muscled carcass with a greater percent of high priced cuts. I grant that three was a smoother, higher quality barrow that showed more scale than two, but I fault three and placed him third because he was a light muscled barrow that narrowed through his ham.

In the bottom pair, I placed three over four, easily, because three was a much trimmer, cleaner barrow that showed more scale and stood on more length of leg than four. Three was a longer sided barrow that was cleaner down his top and more desirably turned over his loin edge. Furthermore, three was trimmer through his side and underline and through the crotch of his ham. Three will hang up a longer, trimmer carcass with a higher ratio of lean to fat. I realize that four was thicker through his lower hams but I fault four and placed him last as he was a soft, overfinished barrow that was wasty through his middle and jowl and was short in his side and should yield the fattest, wastiest carcass of any barrow in the class.

2. Holstein cows

I place this class of Holstein cows 3-4-1-2. I chose three as my top cow and placed her over four, considering this a rather easy placing, because three excels four in dairy character and general appearance. She has a longer and leaner neck, is sharper in the withers, and is leaner in the thighs. She is also much stronger in her back, and loin, more level from hips to pins, neater in her tail setting, and stands on a much straighter pair of rear legs. She is deeper in the chest and has more balance to the udder with a more even teat placement.

However, I would grant that four is deeper in the rear rib with a little higher and wider rear-udder attachment. I would like to see my top cow, three, with a little more stretch and length of barrel.

In my middle pair, four goes over one, another rather easy placing. Four excels one in body capactiy and mammary system being much deeper in her rear rib and having more spread of rib. Her udder extends much higher and stronger in rear-udder attachment with more rear udder development and a neater teat placement. I grant that one stands on a straighter pair of rear legs that are stronger in the pasterns.

In my bottom pair, I placed one over two, I considered this a very close placing, but one excels two in general appearance having a little more style and balance, more breed character in her head and neck, and a straighter pair of rear legs. One also excels two in dairy character being sharper in the withers, a little more lean in the neck, and a little wider in the ribs.

I grant that two excels one in body capacity having a greater spring and spread of rib and being deeper in both the chest and rear ribs, but I placed her last because she lacks the overall balance of one. She is a little too short and thick in her neck, and like one, her udder is unbalanced with weak fore and rear udder attachments.

3. Lambs

I placed this class of Dorset ewes 1-4-3-2-. In the top pair, I placed 1, the outstanding ewe in the class, over 4 as 1 was a larger, growthier ewe with more volume than 4. In addition, 1 was a heavier muscled ewe with more constitution and capacity that 4. One also stood on more bone and had a more desirable set to her hocks than 4. I grant that 4 exhibited more breed character and feminity about her head than 1, but I fault 4 and placed her second for being a small, light muscled ewe that was somewhat sickle-hocked.

In the middle pair, 4 was placed over 2 as 4 was a nicer balanced, straighter-lined ewe that was sounder in her structure than 2. Four was straighter and stronger over her top, longer and more level in her rump, and although she was sickle-hocked, 4 was sounder in the angle of her hock than 2. In addition, 4 was cleaner through her brisket and showed more Dorset breed character than 2. I would concede that 2 was a larger ewe that showed more depth of heart and had particularly more inside muscling to her leg than 4. Two is faulted and placed third, however, as she was droopy in her rump and too straight through her hocks.

In the bottom pair, I placed 2 over 3 as 2 was a growthier and more muscular ewe than 3 with decidedly more ruggedness and body capacity. I realize that 3 was a straighter lined, trimmer ewe than 2, but I criticize 3 and placed her last as she was a narrow, light muscled ewe that lacked the size, constitution, and capacity of the other ewes in the class.

4. Steers

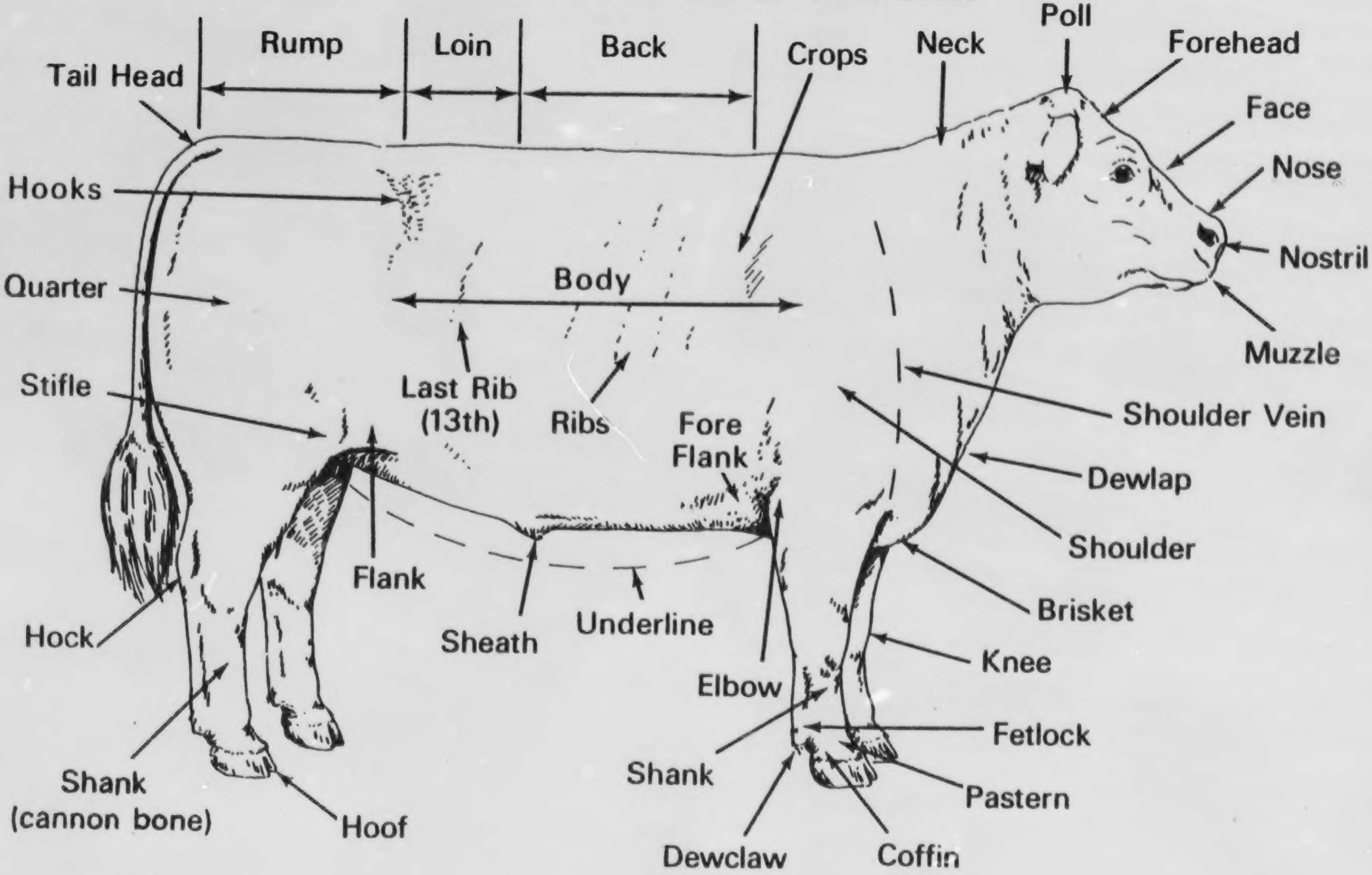
I placed this class of crossbreed steers 2-4-1-3. I placed 2 over 4 because he was a thicker, more muscular steer and would yield the meatiest carcass of any steer in the class. Number 2 showed evidence of more natural muscling and thickness in his round. Number 2 was longer from his hooks to his pins, a stronger topped steer when viewed from the side, and would yield a meatier, higher grading carcass and would have a higher dressing percentage. I grant number 4 was cleaner through the brisket, but I criticize number 4 for carrying an excess of finish.

In the middle pair, I placed 4 over 1 because he was a larger, growthier more uniformly finished steer. Number 4 showed more evidence of natural muscling and thickness in his shoulders and down his top.

Number 4 was a longer rumped steer. I would concede that 1 was a cleaner steer that would yield a carcass with less fat trim, but I criticize 1 for being rough in his finish.

In the bottom pair, I placed 1 over 3 because he was a stronger topped, cleaner steer that would yield a carcass with less fat trim. Number 1 was longer in the rump with more natural thickness through his shoulders, top, rump, and round. However, I grant 3 carried more finish and would yield a higher dressing percentage, but I criticize 3 and placed him last as he was a wasty steer that lacked the combination of muscling and growthiness to place above the other steers in the class.

Parts of A Beef Animal


Tail Head
Rump
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Crops
Neck
Poll
Forehead
Face
Nose
Nostril
Muzzle
Hooks
Quarter
Body
Stifle
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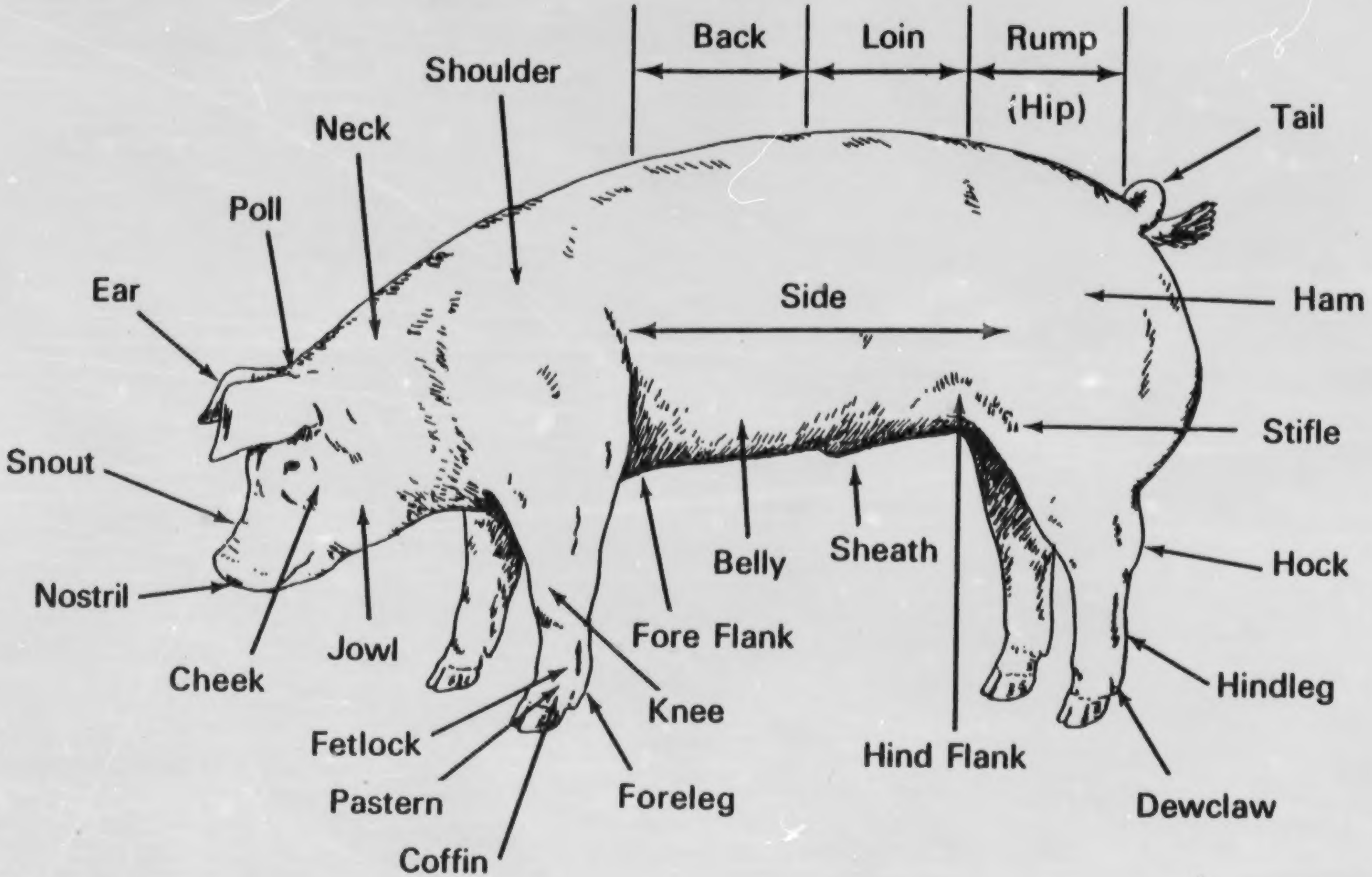
(13th)
Ribs
Fore
Flank
Shoulder Vein
Dewlap
Shoulder
Brisket
Flank
Sheath
Underline
Hock
Elbow
Knee
Fetlock
Shank
Pastern
Shank
(cannon bone)
Hoof
Dewclaw
Coffin

Parts of A Swine


Back
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Stifle
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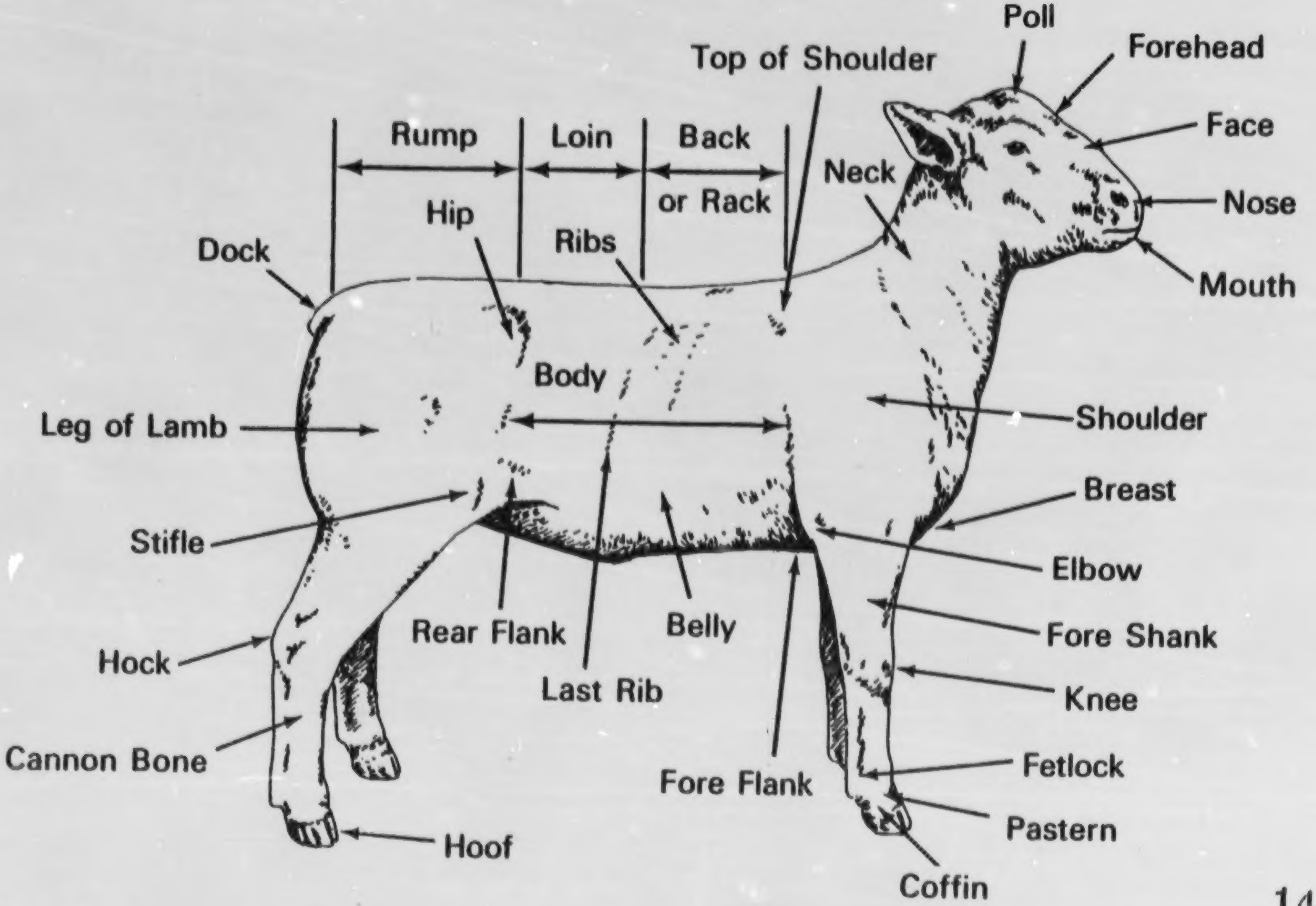
Sheath
Nostril
Fore Flank
Jowl
Hindleg
Cheek
Knee
Fetlock
Hind Flank
Pastern
Foreleg
Dewclaw
Coffin

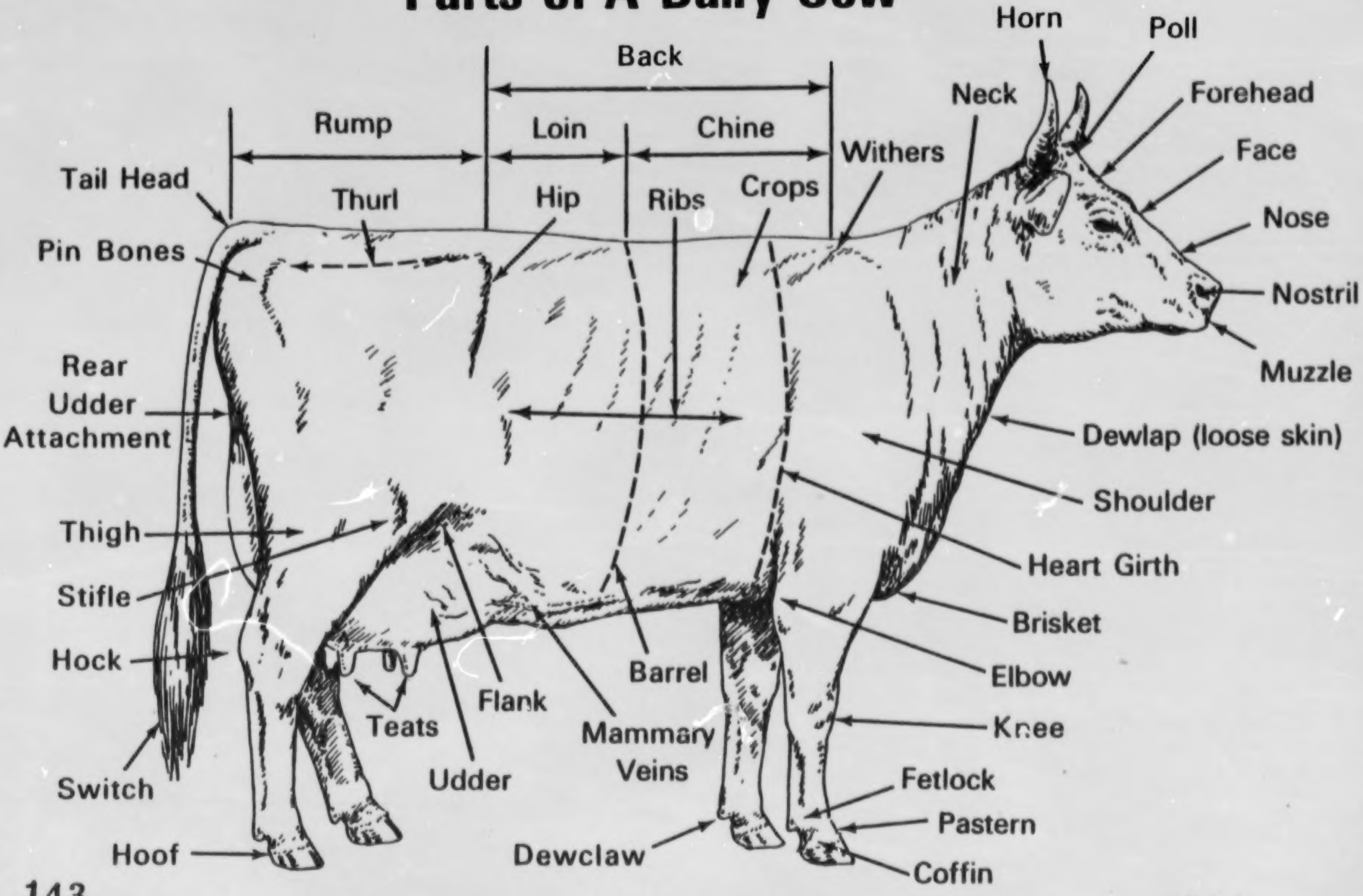
TM 2

Parts of A Sheep


Poll
Forehead
Top of Shoulder
Face
Rump
Loin
Back
or Rack
Neck
Nose
Hip
Ribs
Dock
Mouth
Body
Leg of Lamb
Shoulder
Breast
Stifle
Elbow
Fore Shank
Rear Flank
Belly
Hock
Last Rib
Knee
Cannon Bone
Fetlock
Fore Flank
Pastern
Hoof
Coffin

TM 3

Parts of A Dairy Cow


Horn
Poll
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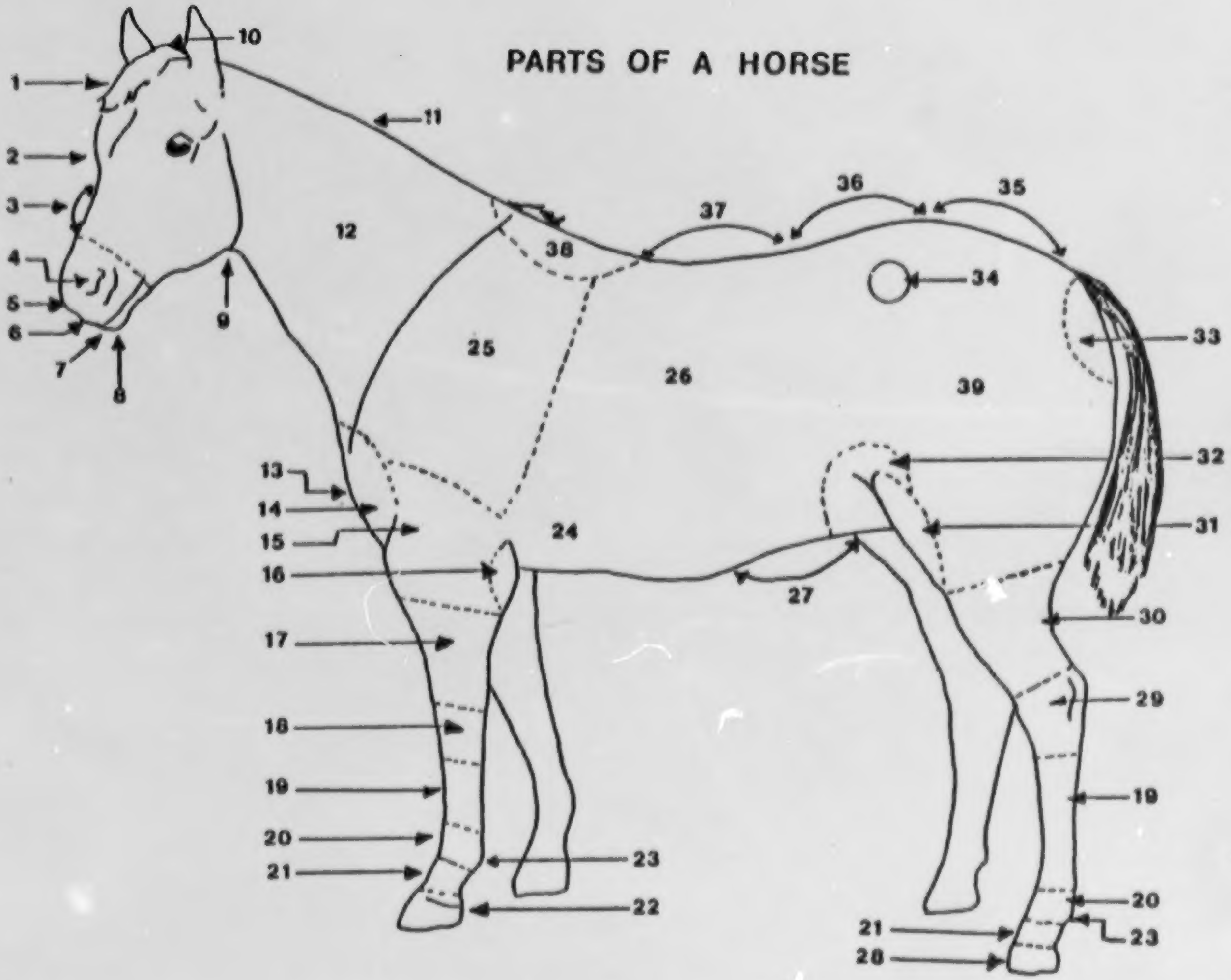
Neck
Forehead
Rump
Loin
Chine
Withers
Face
Tail Head
Thurl
Hip
Ribs
Crops
Nose
Pin Bones
Nostril
Muzzle
Rear Udder Attachment
Dewlap (loose skin)
Shoulder
Thigh
Heart Girth
Stifle
Brisket
Hock
Barrel
Elbow
Flank
Teats
Mammary Veins
Knee
Switch
Udder
Fetlock
Pastern
Hoof
Dewclaw
Coffin

1. FOREHEAD
2. FACE
3. BRIDGE OF NOSE
4. NOSTRIL
5. MUZZLE
6. UPPER LIP
7. LOWER LIP
8. UNDER LIP
9. THROAT LATCH
10. POLL
11. CREST
12. NECK
13. POINT OF SHOULDER
14. CHEST
15. ARM
16. ELBOW
17. FOREARM
18. KNEE
19. CANNON
20. ANKLE
21. PASTERN
22. CORONET
23. FETLOCK
24. GIRTH
25. SHOULDER
26. BARREL
27. ABDOMEN.
28. HOOF
29. HOCK
30. GASKIN
31. STIFLE
32. FLANK
33. BUTTOCK
34. POINT OF HIP
35. CROUP
36. LOIN
37. BACK
38. WITHERS
39. THIGH

PARTS OF A HORSE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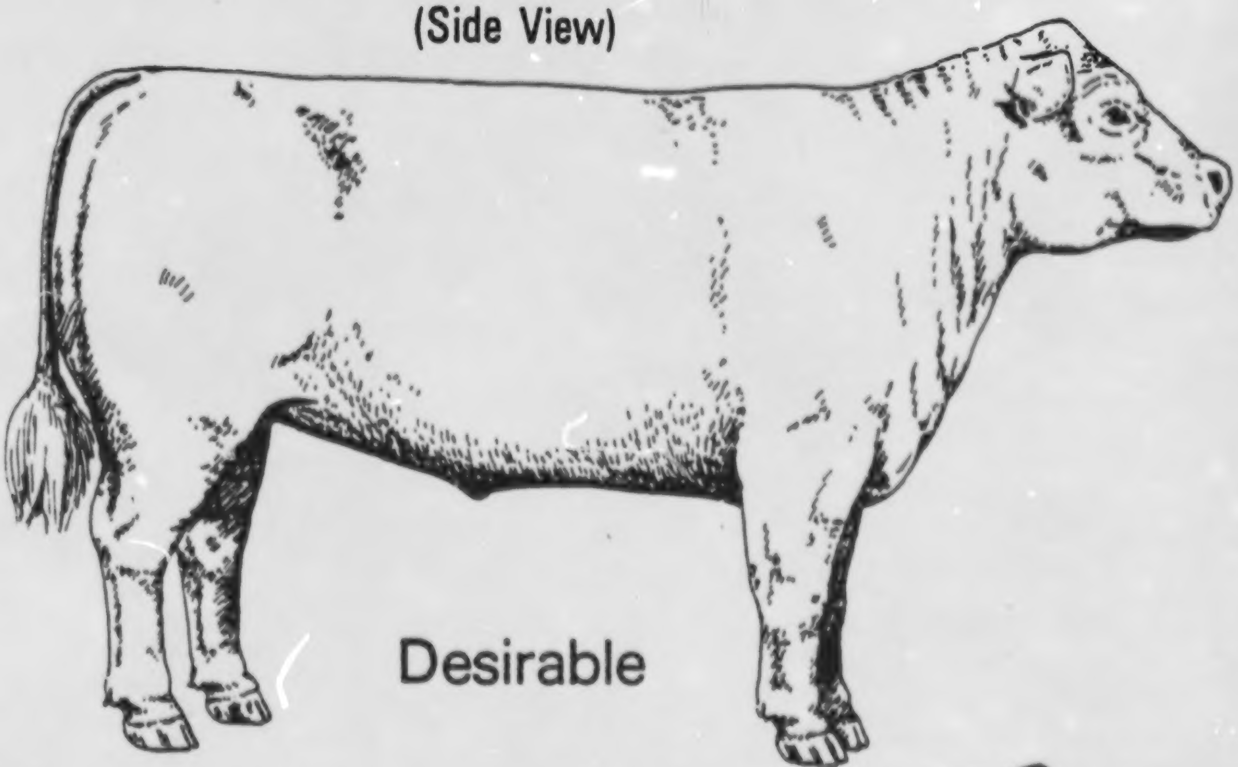
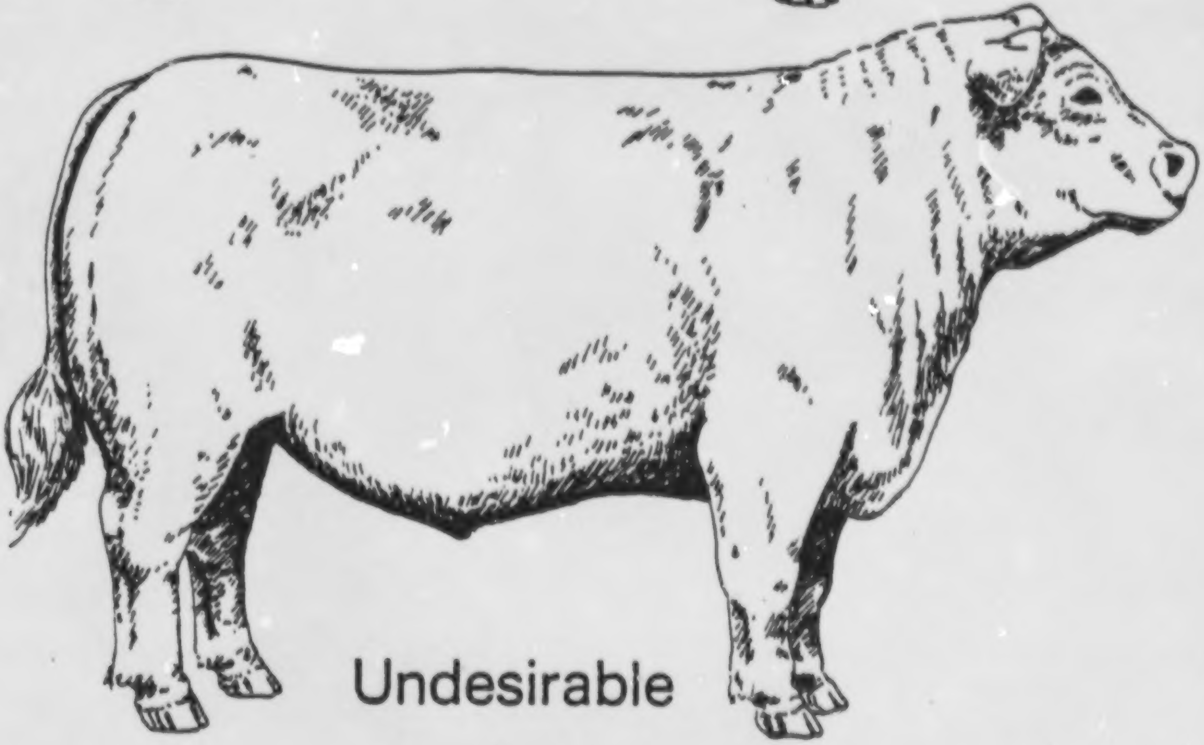
Desirable and Undesirable Beef Animals

(Side View)



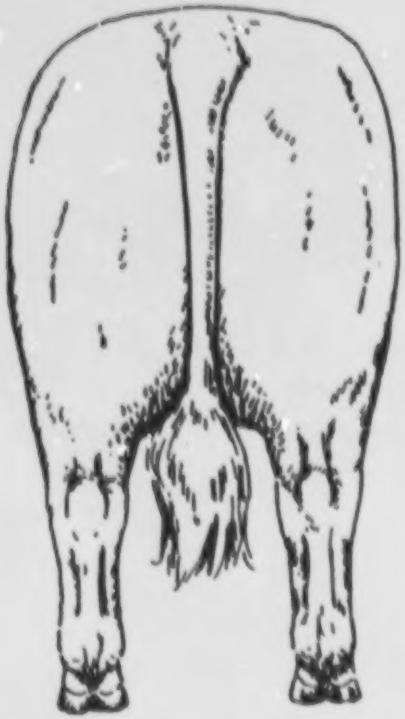
Desirable



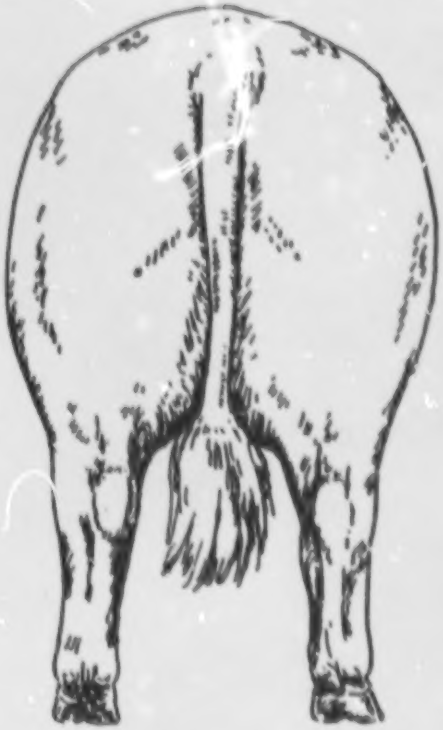
Undesirable

Desirable and Undesirable Beef Animals

(Rear View)



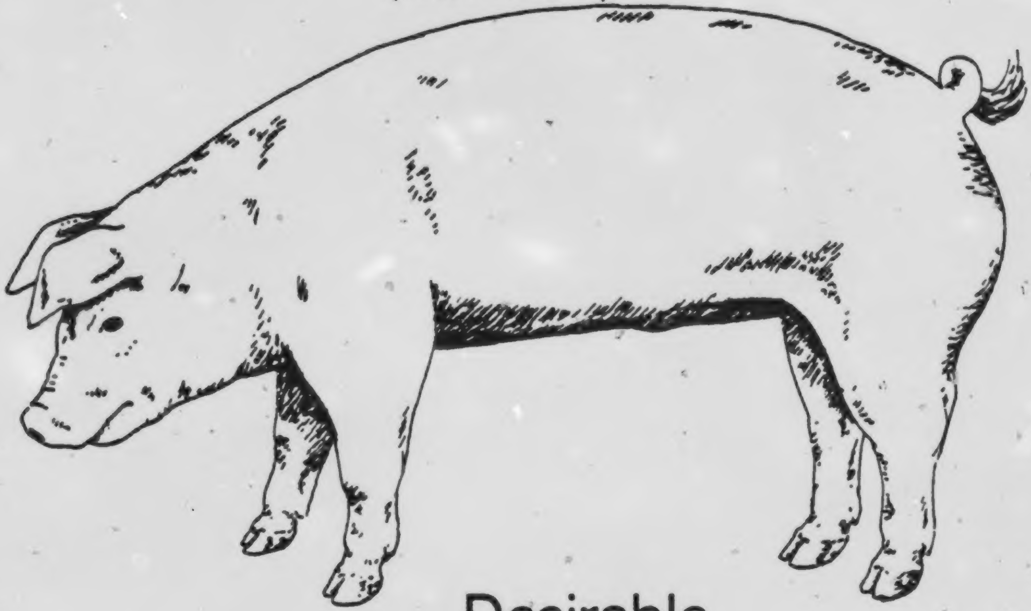
Desirable



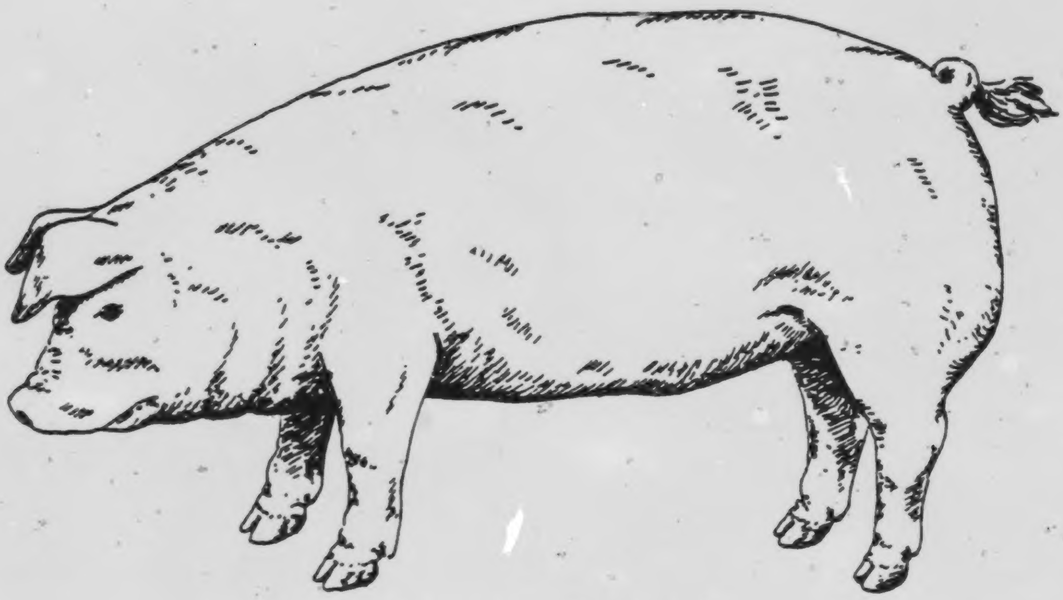
Undesirable

Desirable and Undesirable Barrows

(Side View)



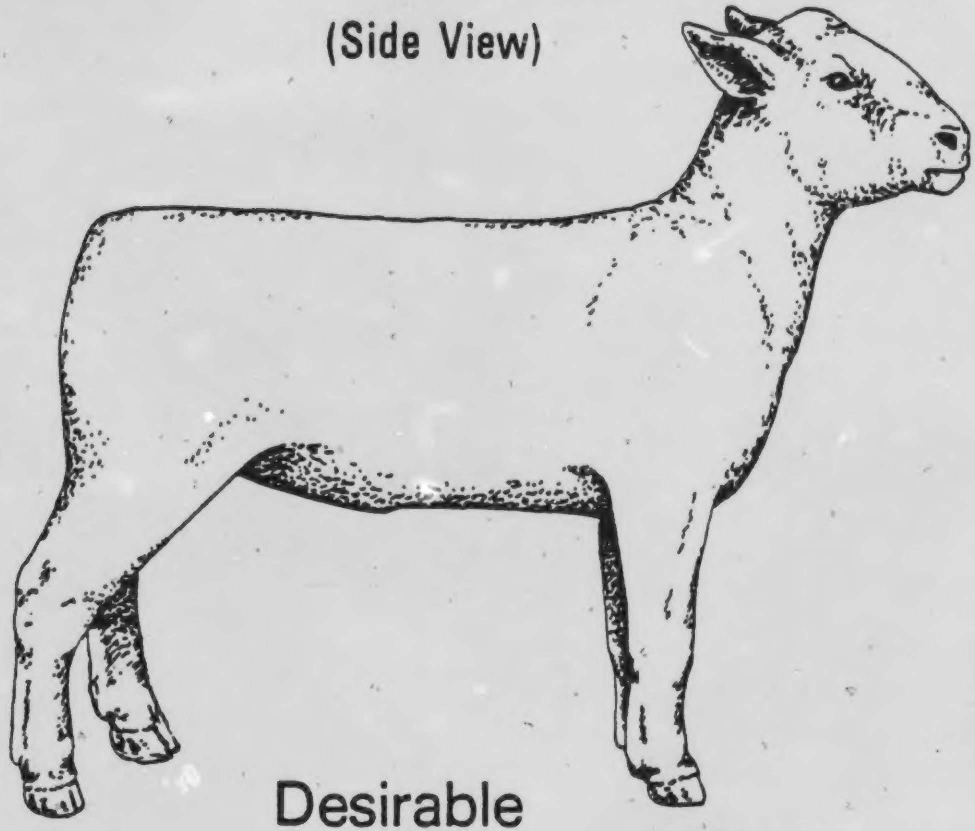
Desirable



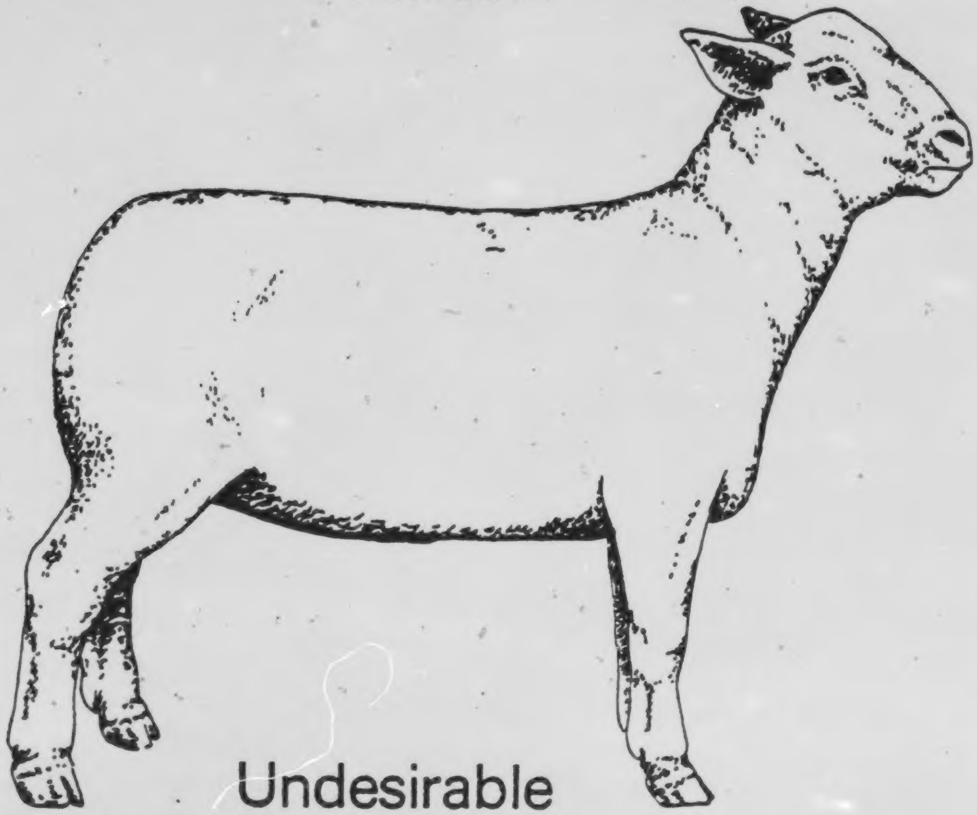
Undesirable

Desirable and Undesirable Lambs

(Side View)



Desirable

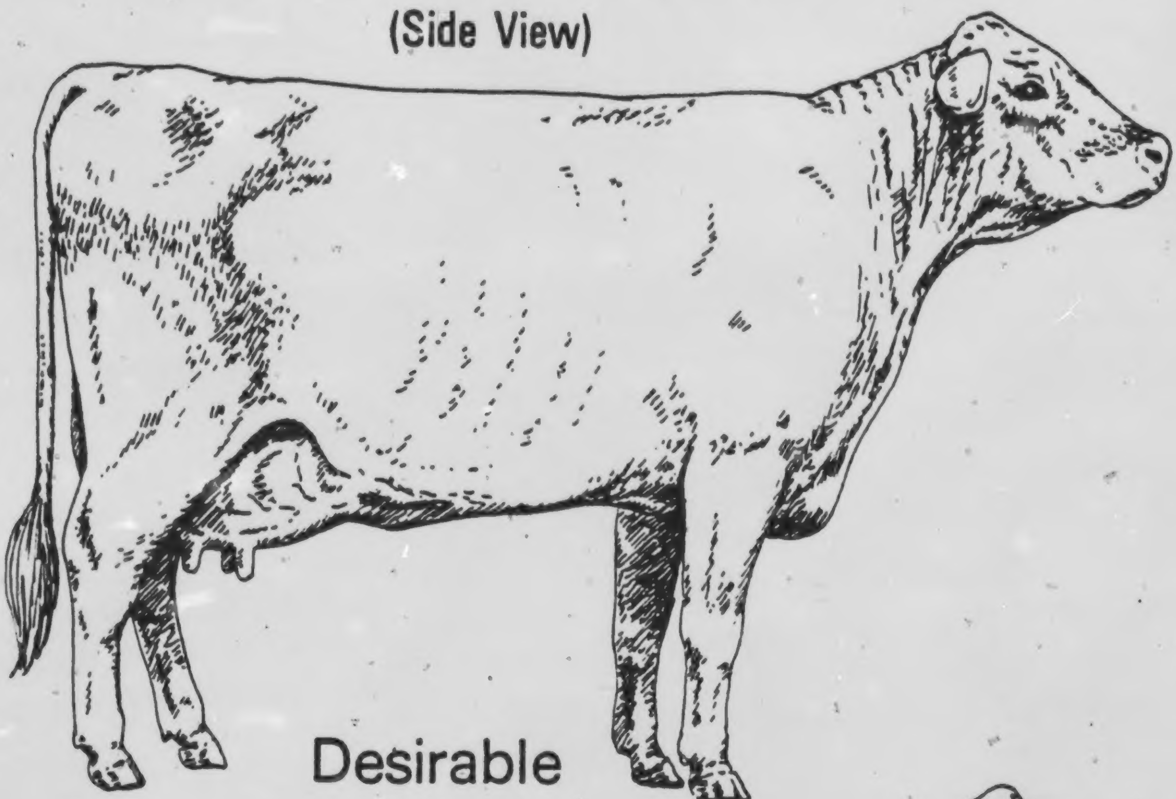


Undesirable

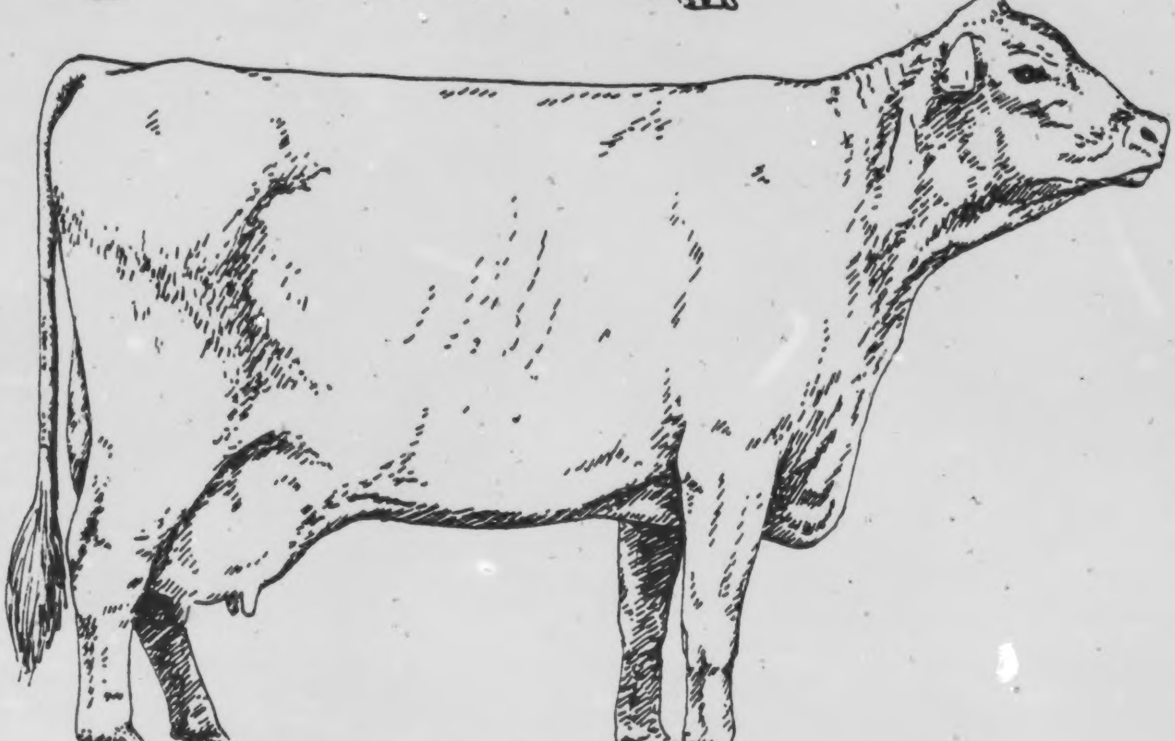
TM 9

Desirable and Undesirable Dairy Cows

(Side View)



Desirable

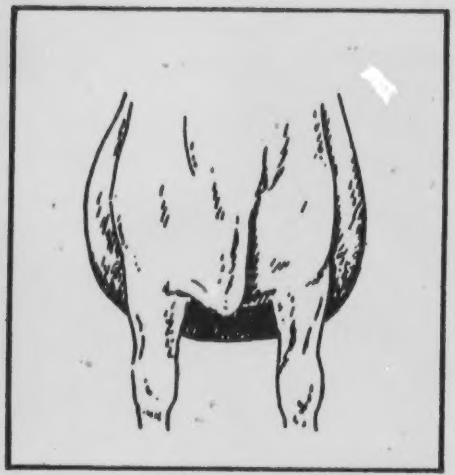


Undesirable

TM 10

Desirable and Undesirable Dairy Cows

(Body Capacity and Udder and Rear Attachment)



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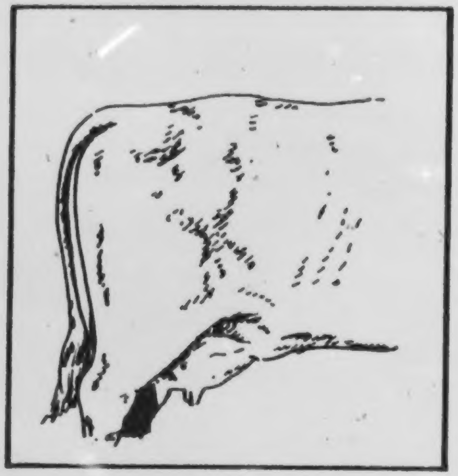

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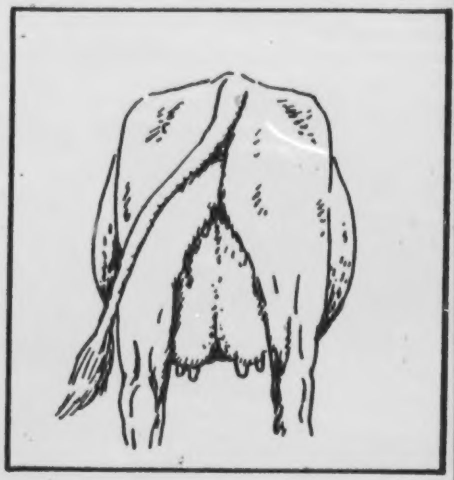
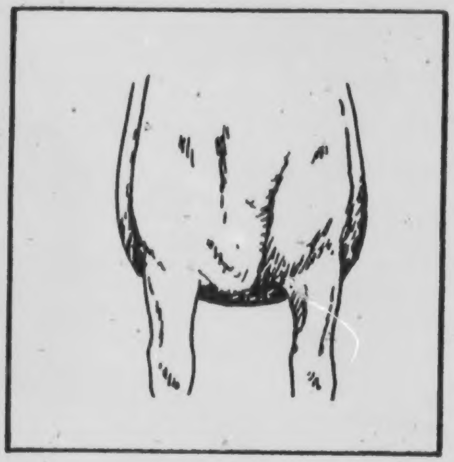
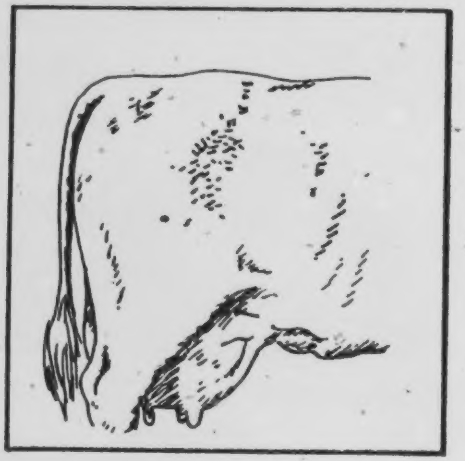


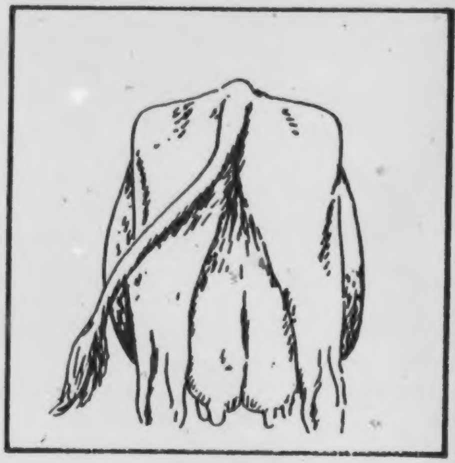
Good



Poor

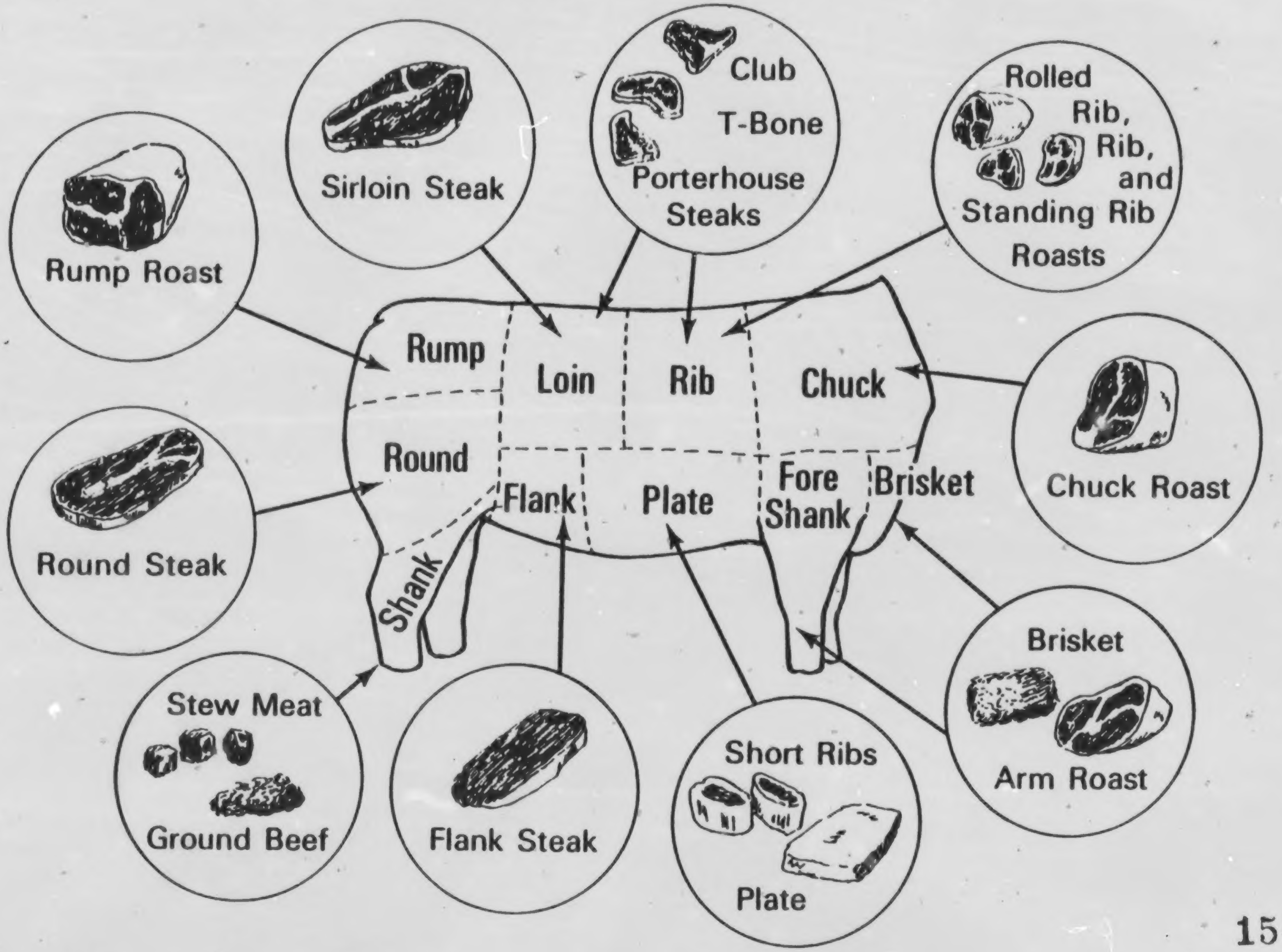


Poor

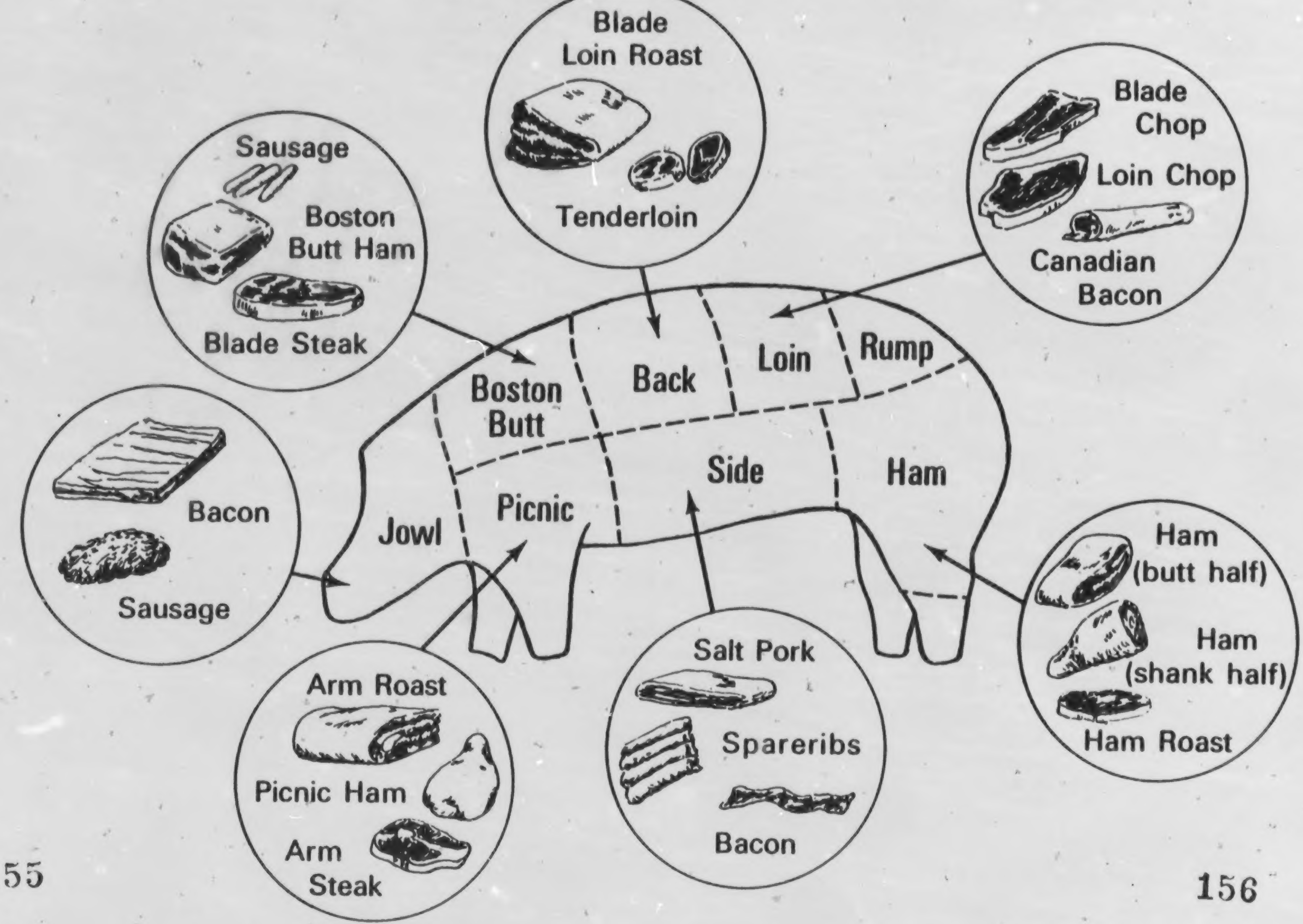


Poor

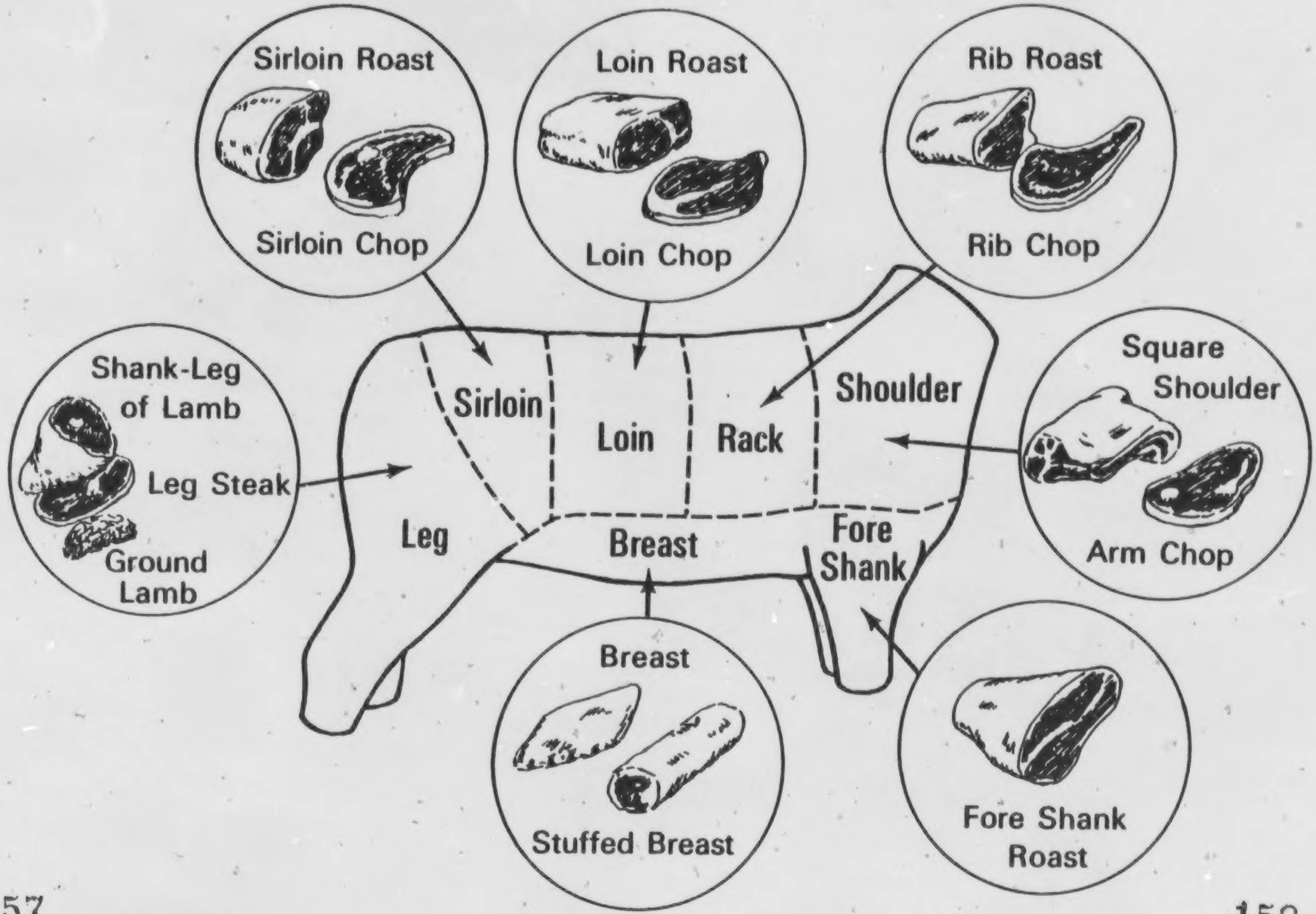
Wholesale Cuts of Beef


Rump Roast
Sirloin Steak
Club
T-Bone
Porterhouse Steaks
Rolled Rib, Rib, and Standing Rib Roasts
Rump
Loin
Rib
Chuck
Chuck Roast
Round
Flank
Plate
Fore Shank
Brisket
Shank
Round Steak
Stew Meat
Ground Beef
Flank Steak
Short Ribs
Plate
Brisket
Arm Roast

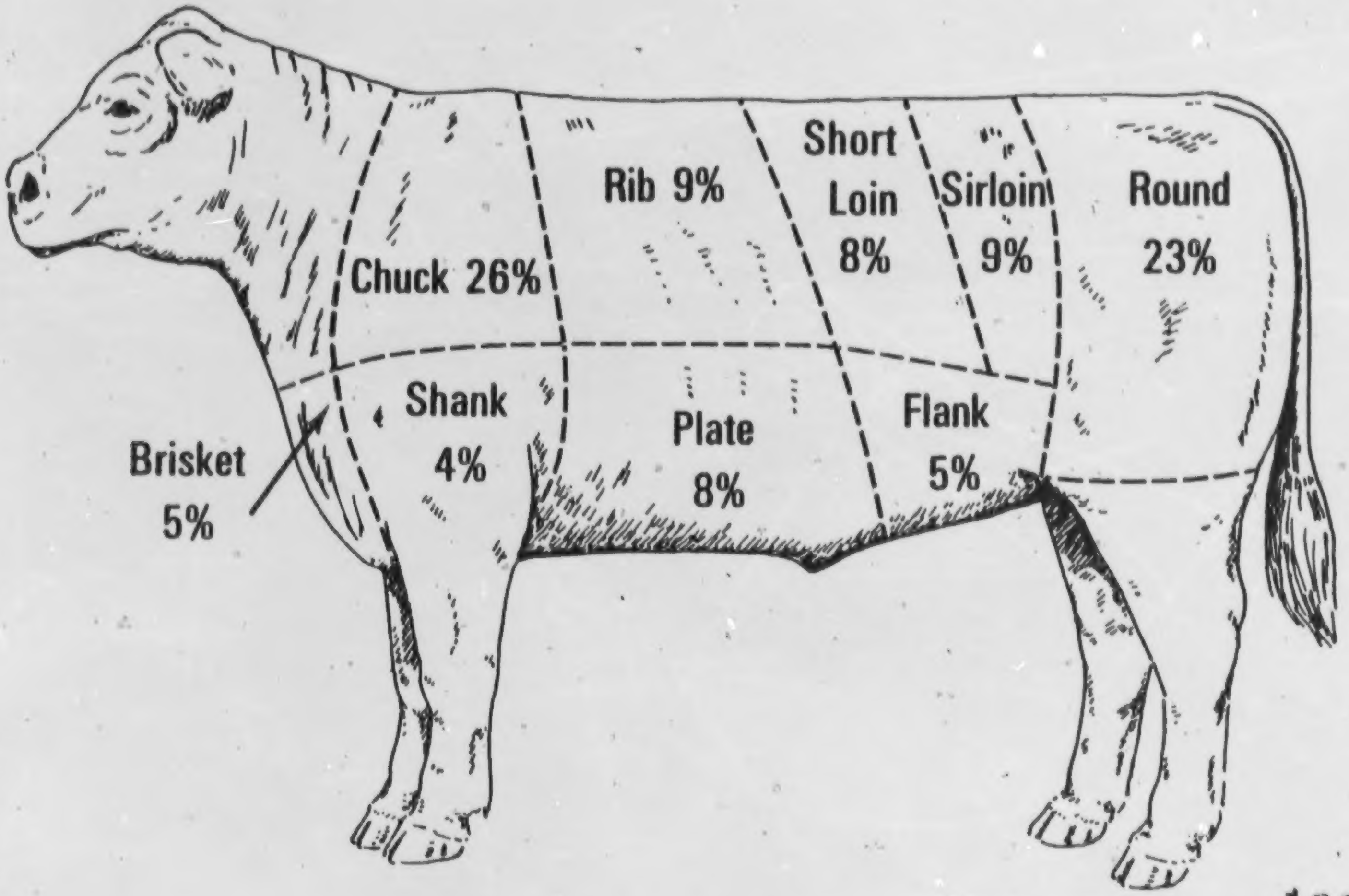
Wholesale Cuts of Pork


Sausage
Boston Butt Ham
Blade Steak
Blade Loin Roast
Tenderloin
Blade Chop
Loin Chop
Canadian Bacon
Boston Butt
Back
Loin
Rump
Side
Ham
Jowl
Picnic
Bacon
Sausage
Arm Roast
Picnic Ham
Arm Steak
Salt Pork
Spareribs
Bacon
Ham (butt half)
Ham (shank half)
Ham Roast

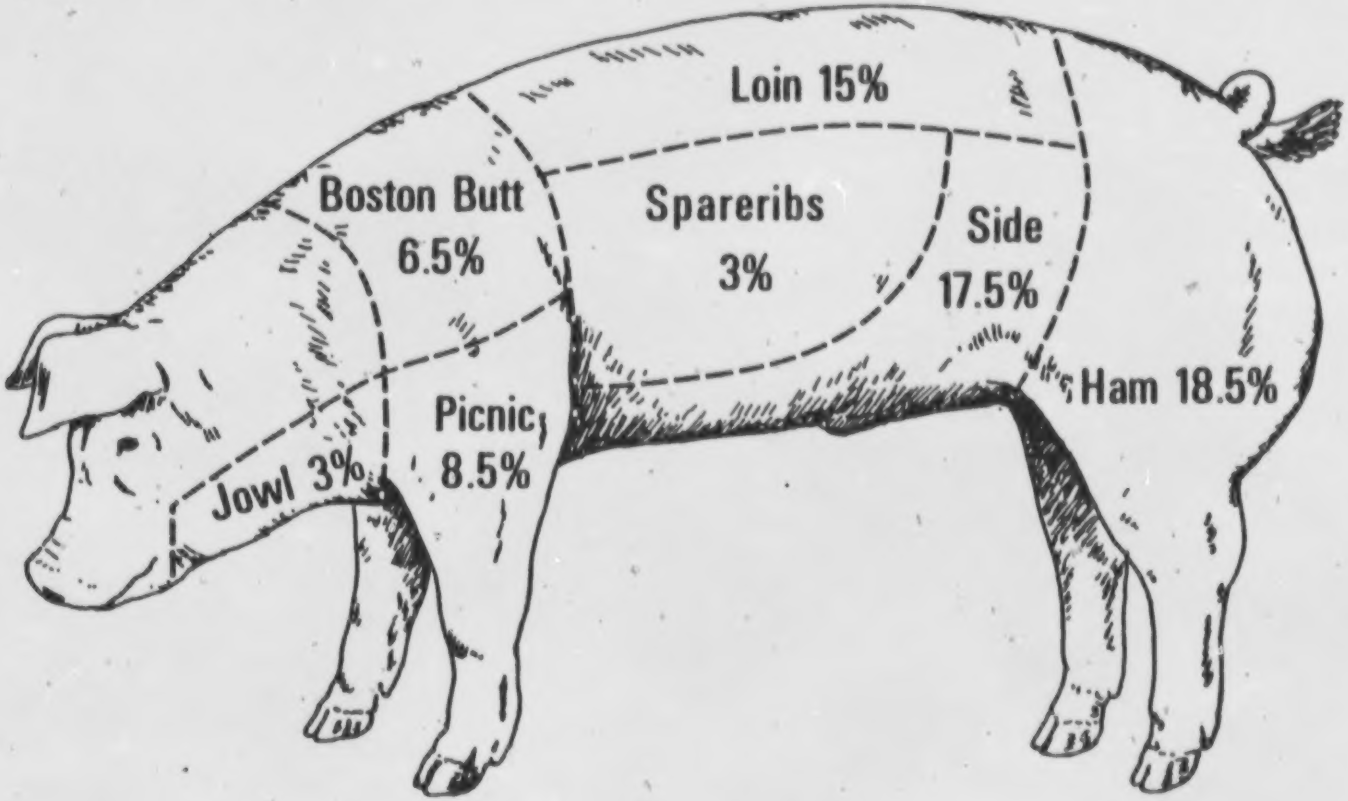
Wholesale Cuts of Lamb


Sirloin Roast
Sirloin Chop
Loin Roast
Loin Chop
Rib Roast
Rib Chop
Shank-Leg of Lamb
Leg Steak
Ground Lamb
Sirloin
Loin
Rack
Shoulder
Leg
Breast
Fore Shank
Square Shoulder
Arm Chop
Breast
Stuffed Breast
Fore Shank Roast

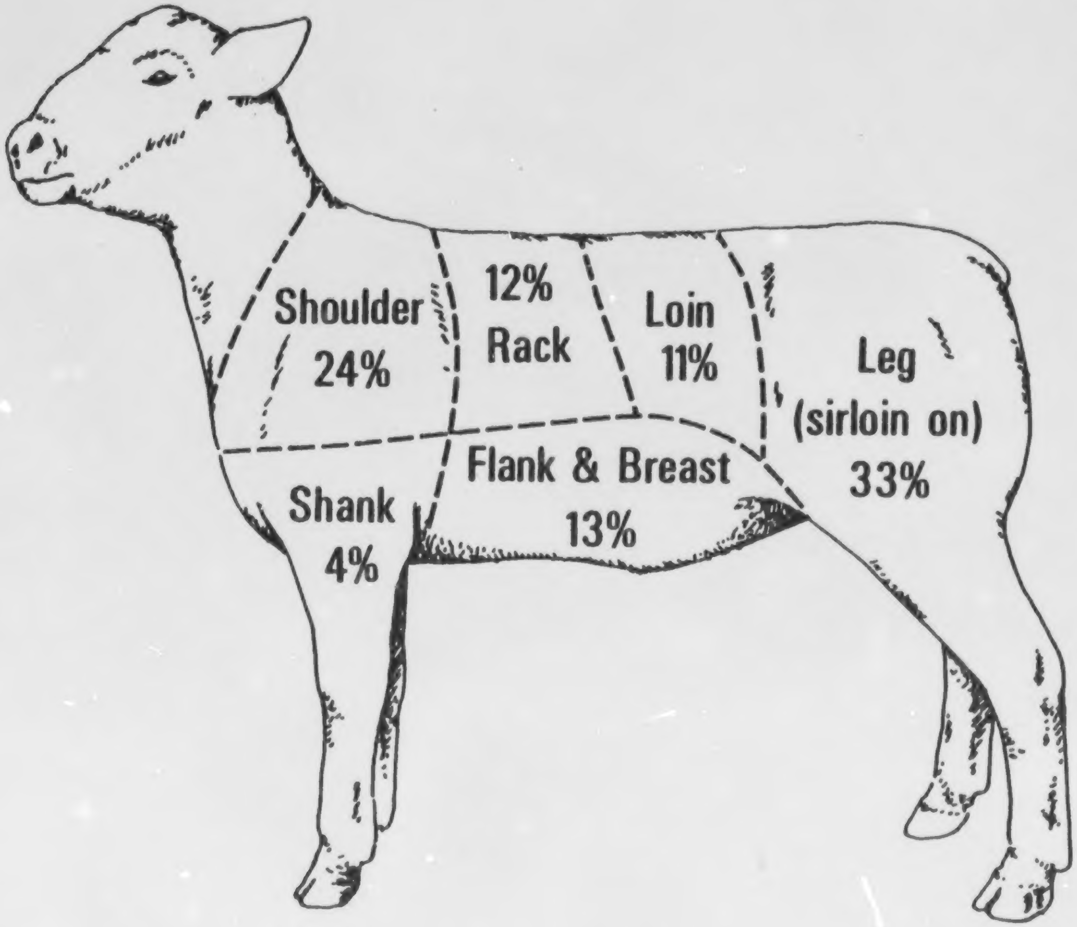
Approximate Yield Percentage of a Beef Carcass


Chuck 26%
Rib 9%
Short Loin 8%
Sirloin 9%
Round 23%
Shank 4%
Plate 8%
Flank 5%
Brisket 5%

Approximate Yield Percentage of a Swine Carcass


Loin 15%
Boston Butt 6.5%
Spareribs 3%
Side 17.5%
Ham 18.5%
Picnic 8.5%
Jowl 3%

Approximate Yield Percentage of a Lamb Carcass


Shoulder
24%
12%
Rack
Loin
11%
Leg
(sirloin on)
33%
Flank & Breast
13%
Shank
4%

TM 17

LIVESTOCK SELECTION
UNIT III

TEST

1. Match the terms on the right with the correct definition.

_____a. Overall smoothness, blending of shoulders, and refinement of head and bone

_____b. Evidence of vigor or "doing ability" denoted by depth and fullness of heart, spring of ribs, width of chest floor, and substance of bone

_____c. Combination of characteristics which indicate the female will be a good mother

_____d. Traits distinguishing a male from a female

_____e. General term commonly defined as a combination of characteristics which make an animal most useful for a specific purpose

_____f. Freedom of excess finish or fat

_____g. Condition of having size and weight for age

_____h. Traits which denote one breed from another

_____i. Proper proportions and blending of parts

_____j. Ability of an animal to "hold itself together" as indicated by strength of top, tightness of shoulders, and squareness of feet and by leg placement

_____k. Size of the animal as determined by skeletal structure

1. Type
2. Balance of symmetry
3. Meatiness or muscling
4. Quality
5. Trimness
6. Tight-framed
7. Soundness
8. Constitution
9. Growthiness
10. Scale
11. Ruggedness
12. Broodiness
13. Breed character
14. Femininity
15. Masculinity

_____l. Traits distinguishing a female from a male

_____m. High proportion of volume in the areas of the high priced cut

_____n. Quality of being correct on the feet and legs as opposed to unsound

_____o. Quality of having large bones and frame

2. List three steps in the livestock selection process.

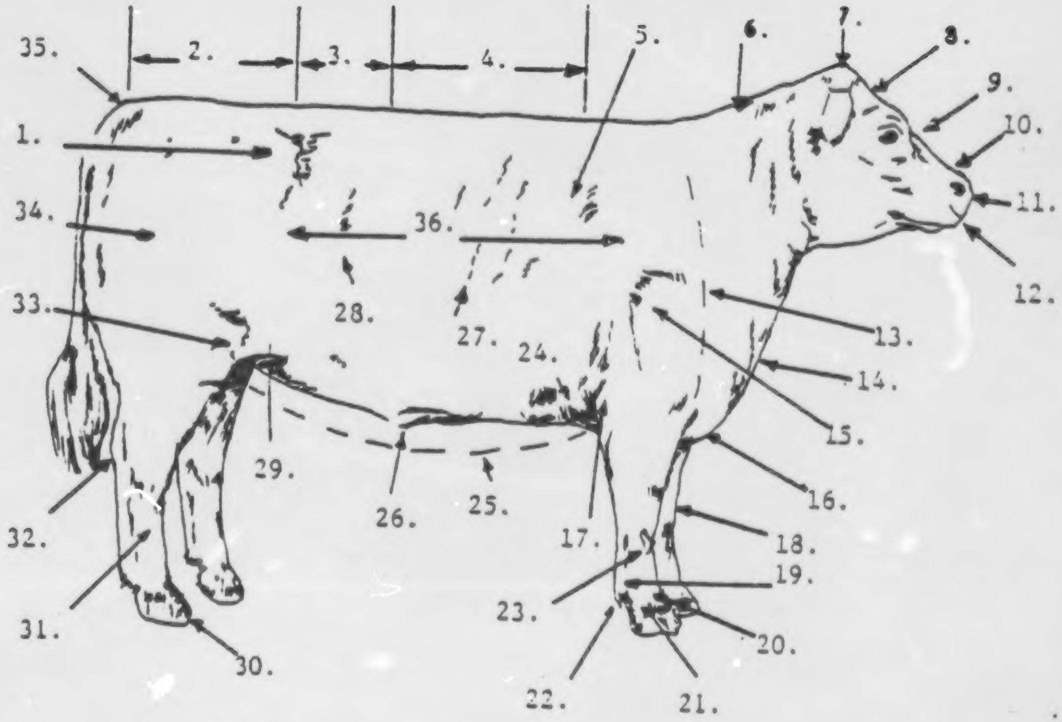
   a.

   b.

   c.

3. Identify the parts of a beef, swine, sheep, and dairy animal.

a. Beef


35.
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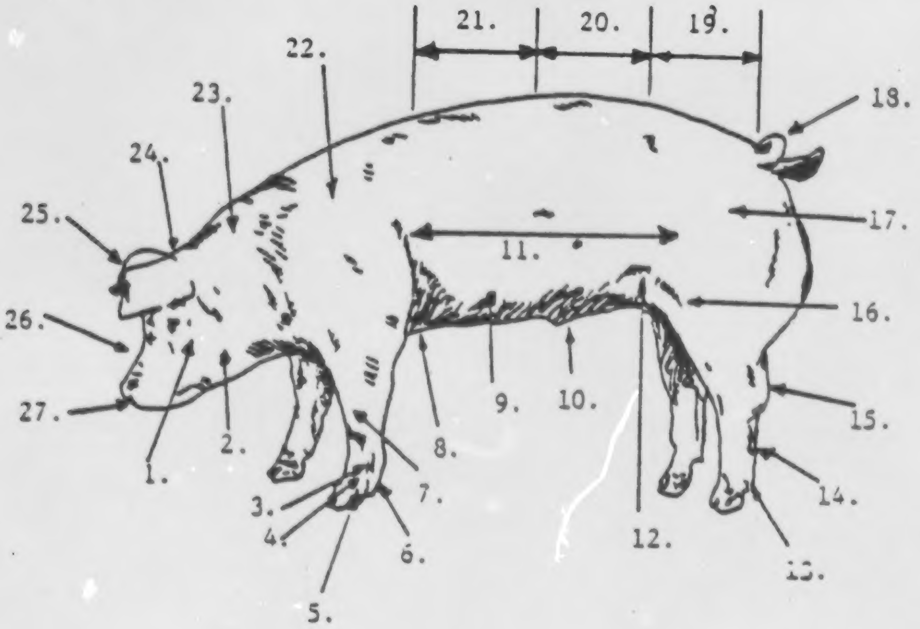
35. ____________________
36. ____________________

b. Swine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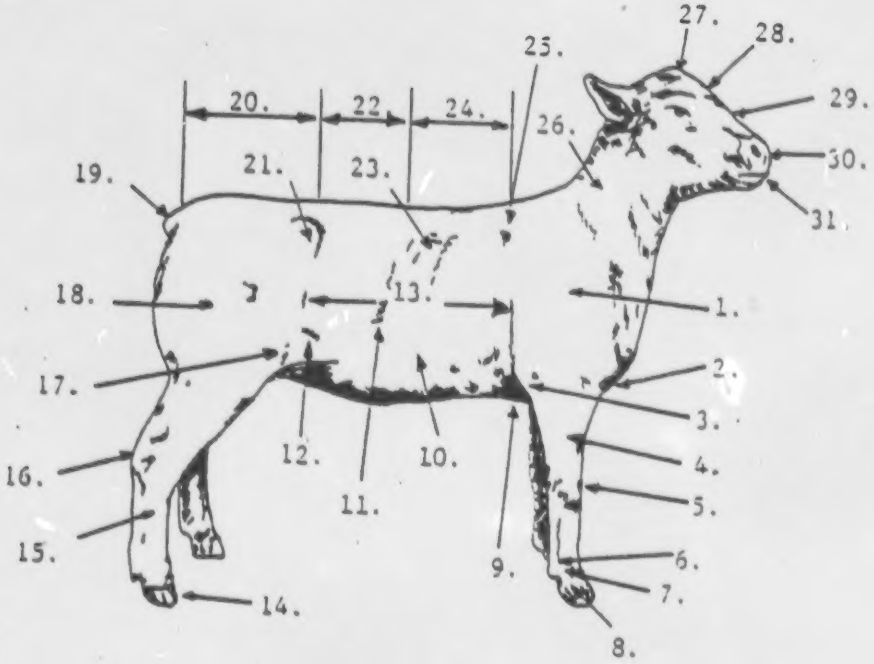
26. ______________________________
27. ______________________________

c. Sheep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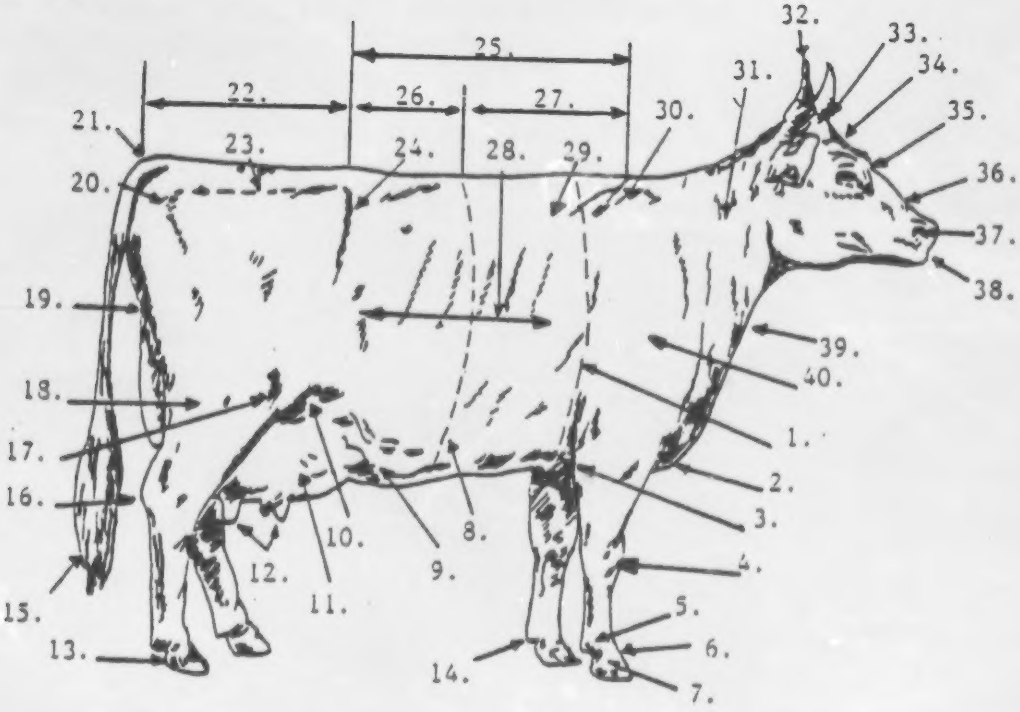
30. ______________
31. ______________

d. Dairy Cow



32.
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34. ____________
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36. ____________
37. ____________
38. ____________
39. ____________
40. ____________

e. **Label parts of the horse**

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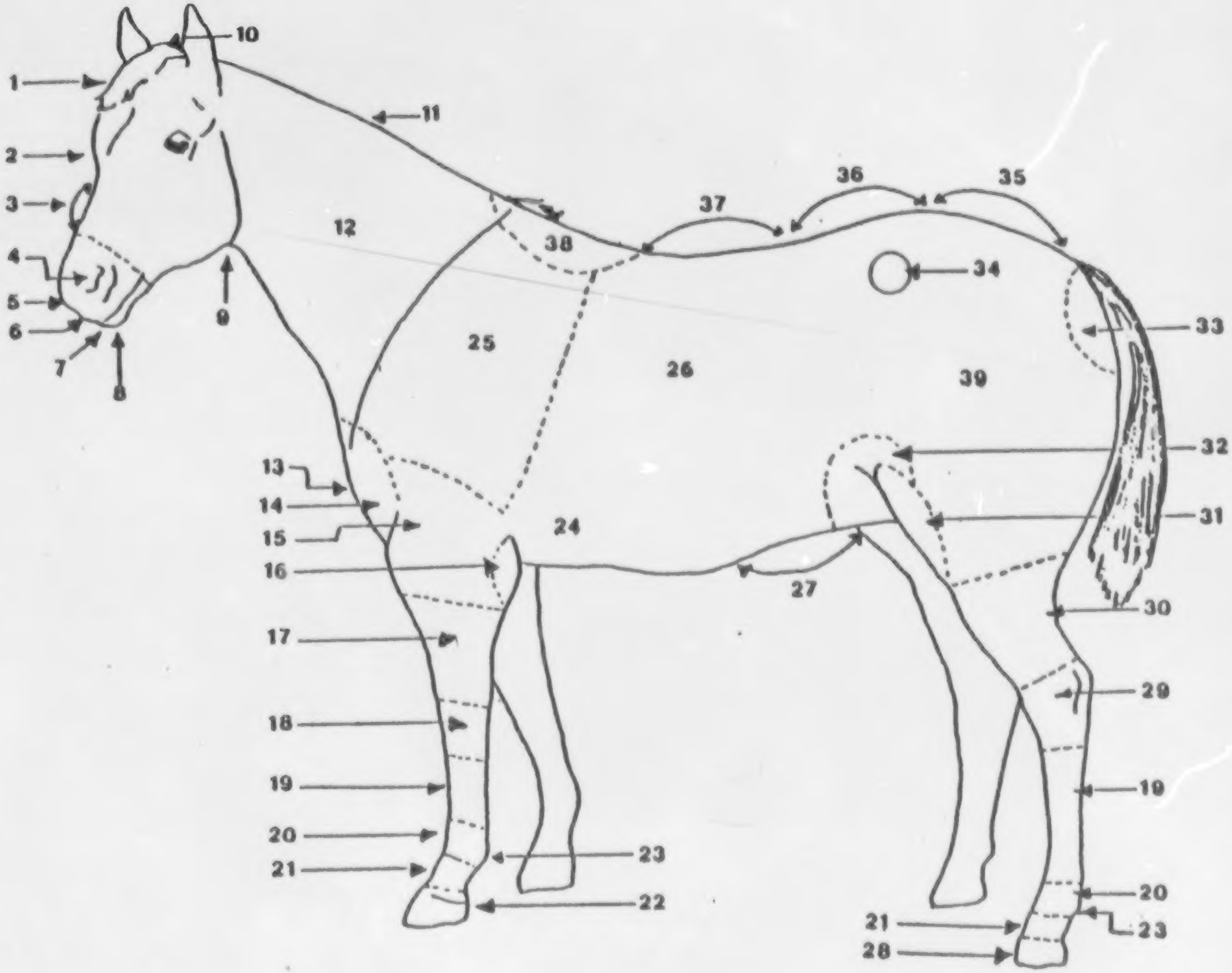
39.


10
1
11
36
35
2
37
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34
4
33
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7
25
26
39
8
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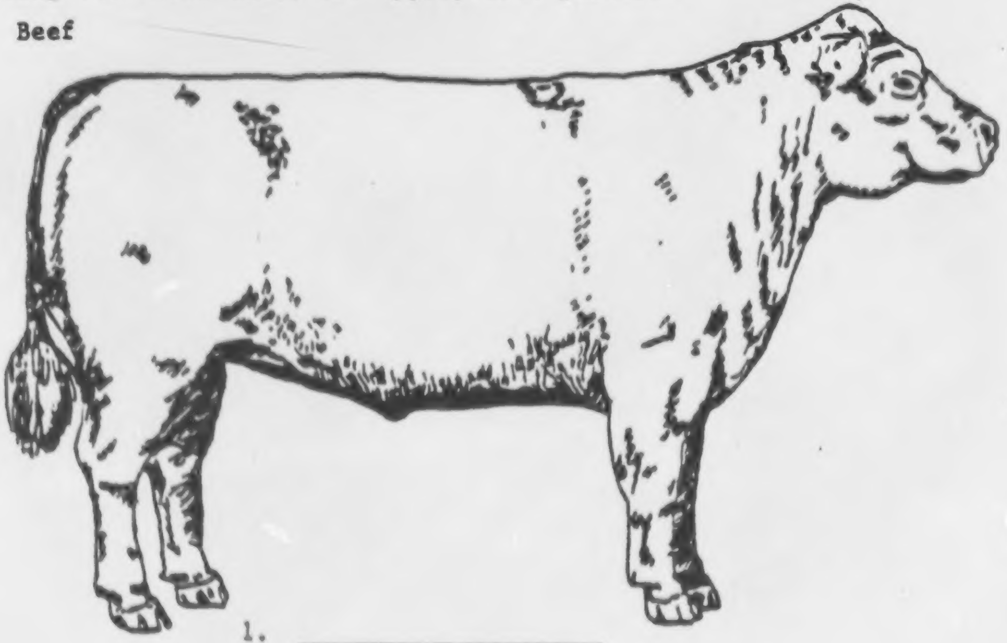
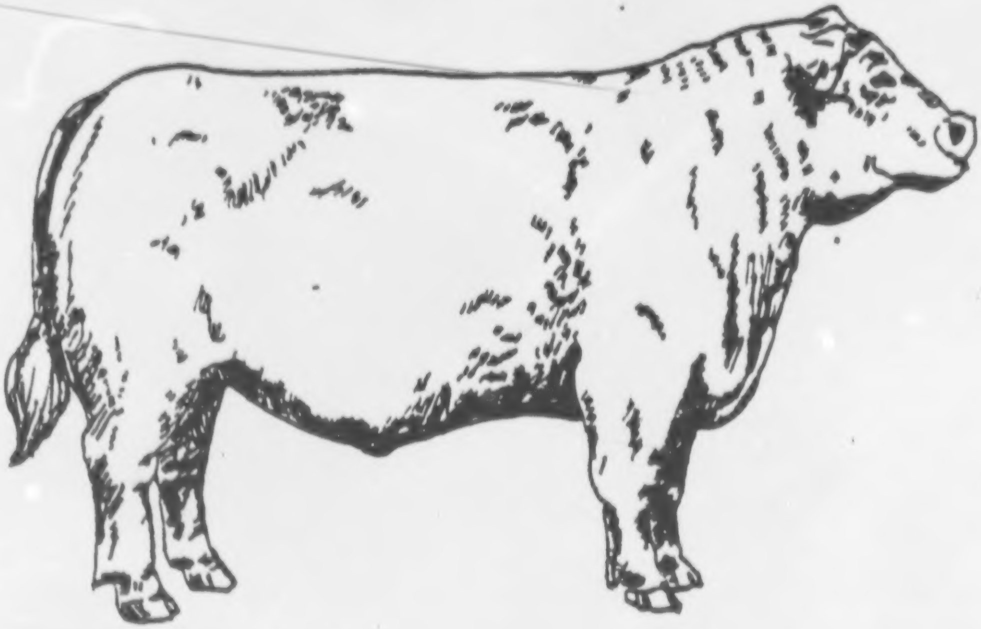
23
28

4. Identify the following animals as being desirable and undesirable by writing the words under the appropriate picture.

a. Beef

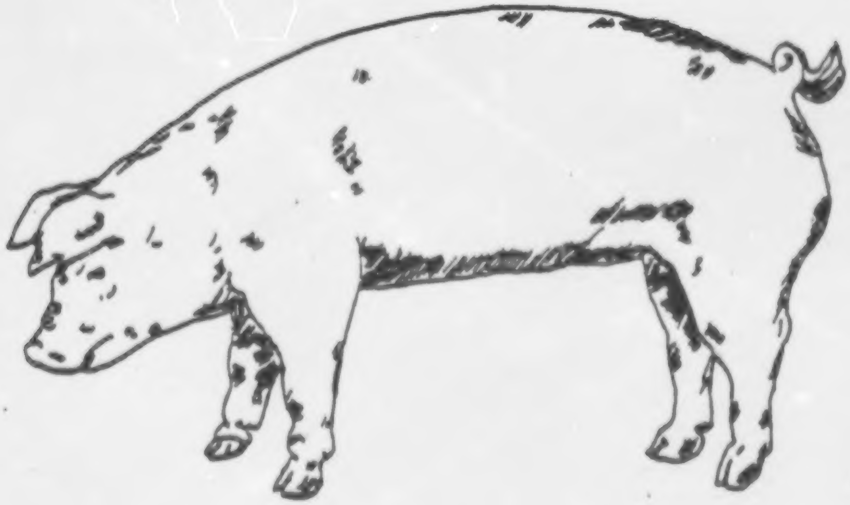


1. ______________________

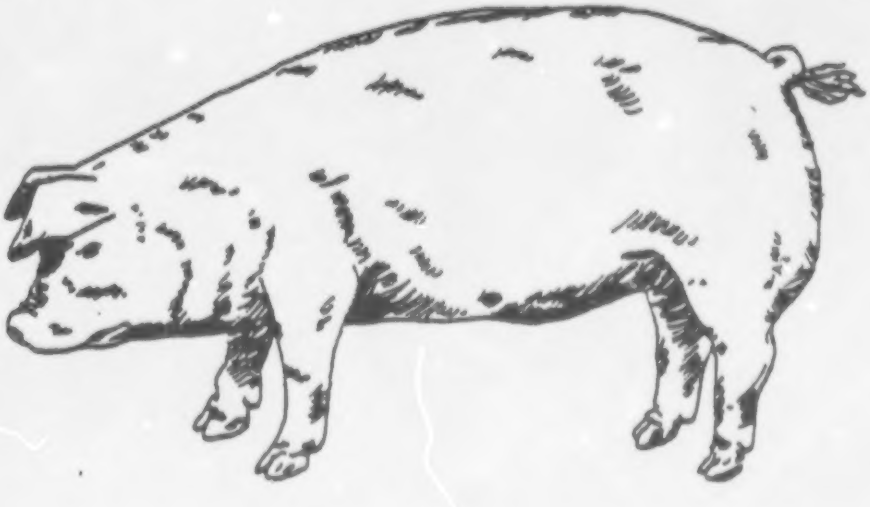


2. ______________________

b. Swine

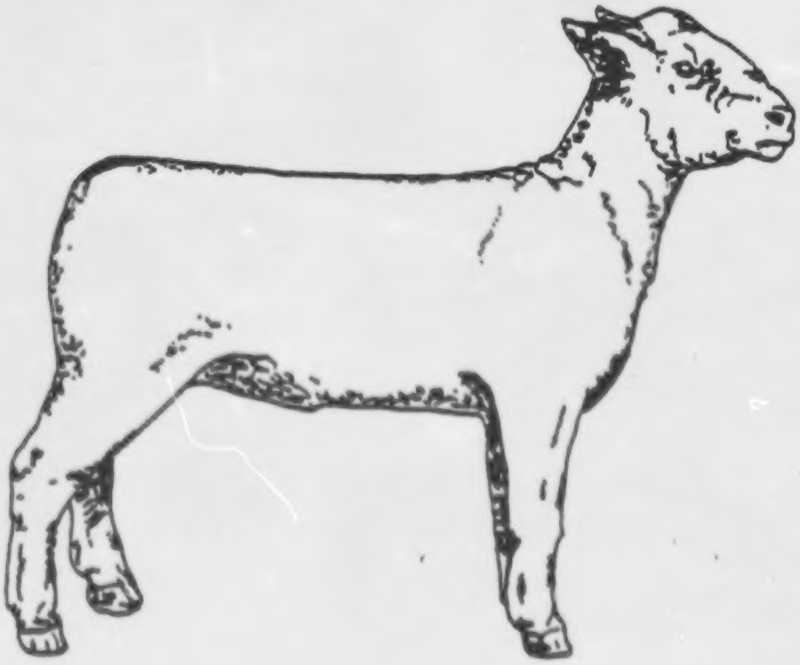


1. ____________________

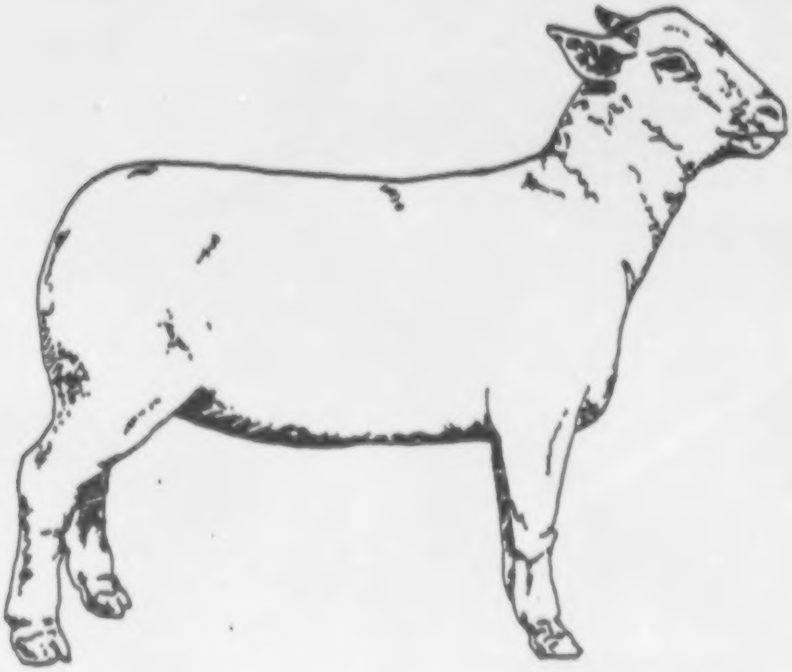


2. ____________________

c. Sheep

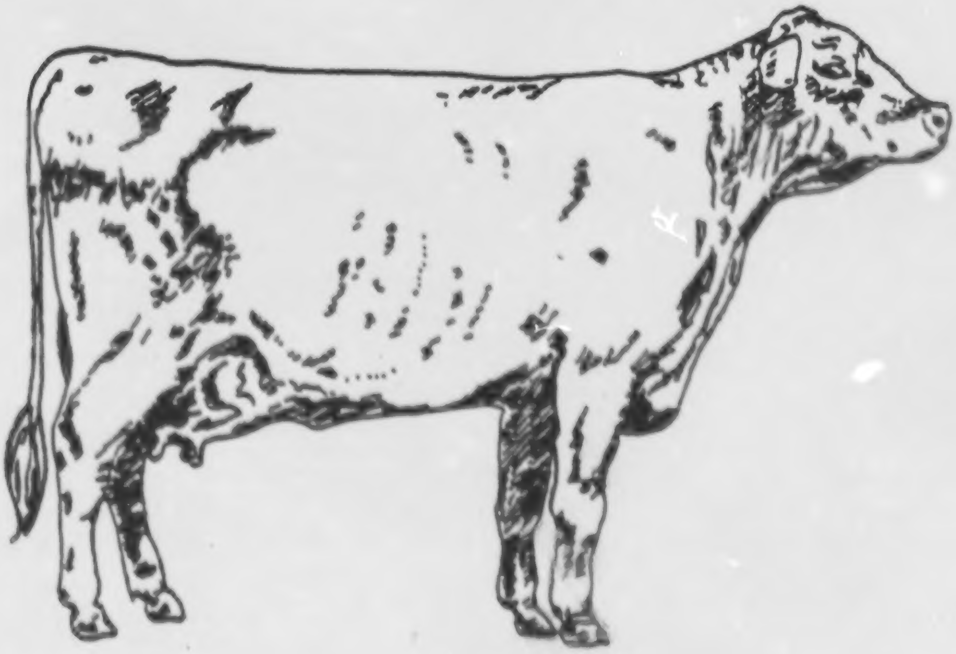


1. ____________________

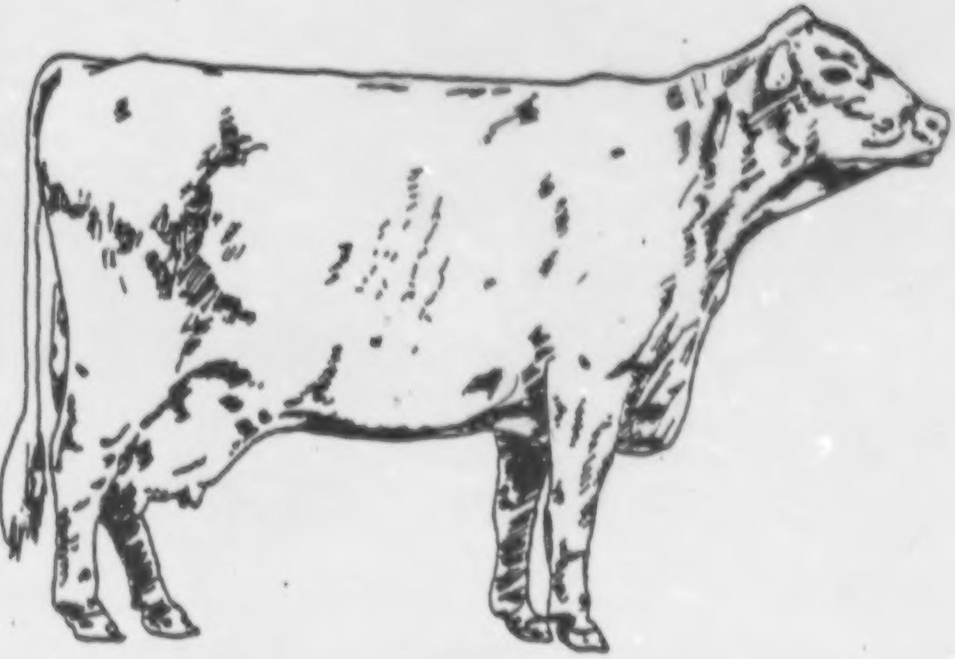


2. ____________________

d. Dairy Cow



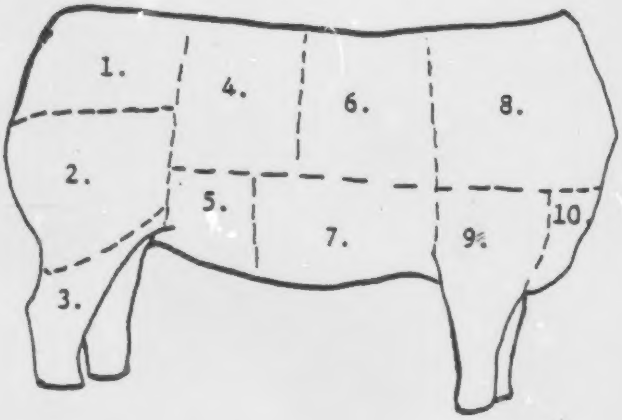
1. ______________________



2. ______________________

5. Identify the wholesale cuts of these animals.

a. Beef


1.
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1. ______________________
2. ______________________
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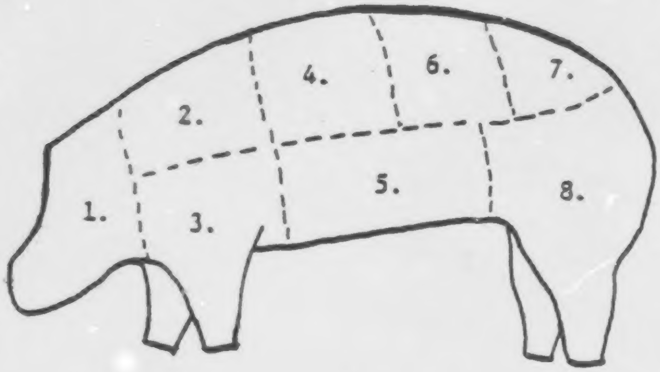
6. ______________________
7. ______________________
8. ______________________
9. ______________________
10. ______________________

b. Swine



1. ______________________
2. ______________________
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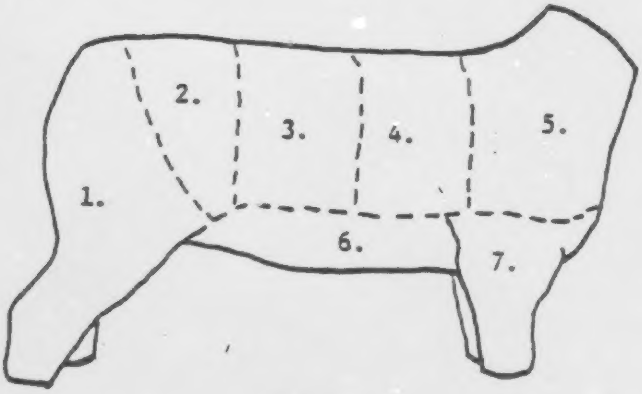
6. ______________________
7. ______________________
8. ______________________

c. Sheep

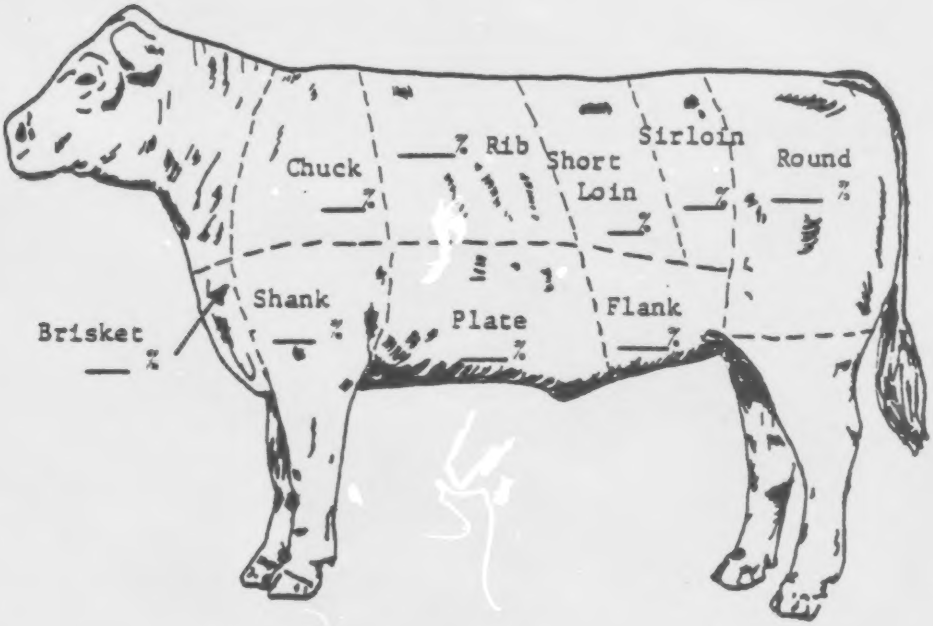


1. ______________________
2. ______________________
3. ______________________
4. ______________________
5. ______________________
6. ______________________
7. ______________________

6. Match the approximate percentage of yield to the name of the wholesale cut by writing it in the blank on the picture below.

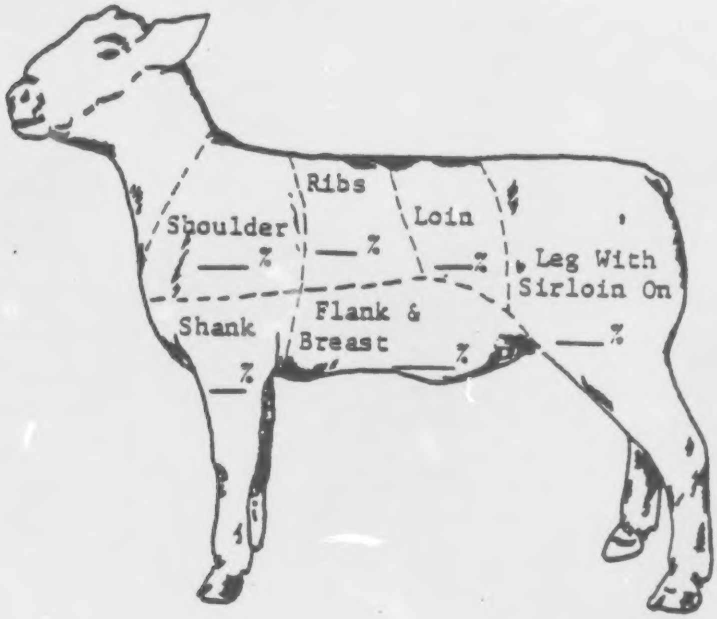
a. Beef

23%
9%
8%
5%
26%
9%
4%
5%
8%


Chuck
___%
___% Rib
Short Loin
___%
Sirloin
___%
Round
___%
Brisket
___%
Shank
___%
Plate
___%
Flank
___%

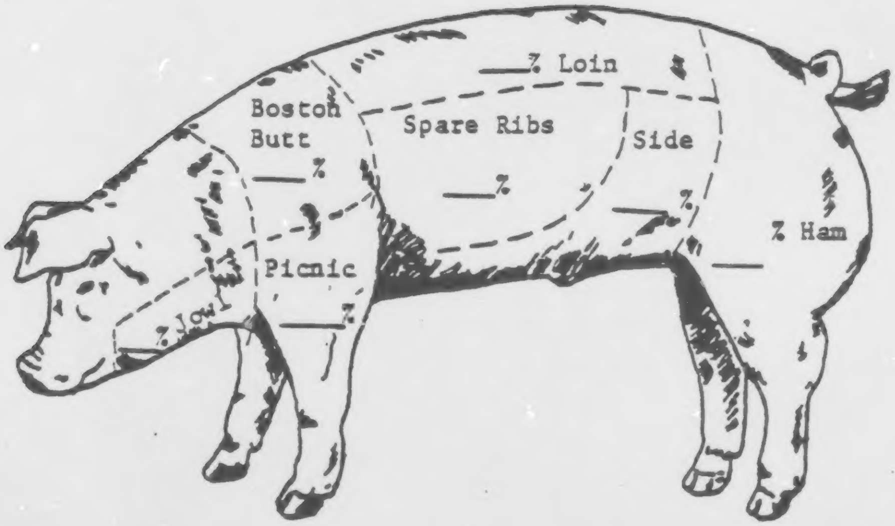
b. Sheep

16%
4%
12%
24%
33%
11%


Ribs
Shoulder
___%
___%
Loin
___%
Leg With Sirloin On
___%
Shank
___%
Flank & Breast
___%

c. Swine

18.5%
17.5%
15.0%
8.5%
6.5%
3.0%
3.0%


___% Loin
Boston Butt
___%
Spare Ribs
___%
Side
___%
% Ham
___
Picnic
___%
% Jowl

7. Write ten comparative advantages and ten criticism terms as used in selection of livestock.

Comparative Advantage Terms

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)

Criticism Terms

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)

8. Write a sample set of reasons on a class of __________________________.
(class and placing to be completed by instructor)

LIVESTOCK SELECTION
UNIT III

ANSWERS TO TEST

1. a. 4
   b. 8
   c. 12
   d. 15
   e. 1
   f. 5
   g. 9
   h. 13
   i. 2
   j. 6
   k. 10
   l. 14
   m. 3
   n. 7
   o. 11
2. a. Know the parts of the live animals
   b. Know the wholesale cuts of the animal
   c. Know what the ideal animal looks like
3. a. Beef
      1) Hooks
      2) Rump
      3) Loin
      4) Back
      5) Crops
      6) Neck
      7) Poll
      8) Forehead
      9) Face
      10) Nose
      11) Nostril
      12) Muzzle
      13) Shoulder vein
      14) Dewlap
      15) Shoulder
      16) Brisket
      17) Elbow
      18) Knee
      19) Fetlock
      20) Pastern
      21) Coffin
      22) Dewclaw
      23) Shank
      24) Fore flank
      25) Underline
      26) Sheath
      27) Ribs
      28) Last rib (13th)
      29) Flank
      30) Hoof
      31) Shank (cannon bone)
      32) Hock
      33) Stifle
      34) Quarter
      35) Tail head
      36) Body
   b. Swine
      1) Check
      2) Jowl
      3) Fetlock
      4) Pastern
      5) Coffin
      6) Foreleg
      7) Knee
      8) Fore flank
      9) Belly
      10) Sheath
      11) Side
      12) Hind flank
      13) Dewclaw
      14) Hindleg
      15) Hock
      16) Stifle
      17) Ham
      18) Tail
      19) Rump (hip)
      20) Loin
      21) Back
      22) Shoulder
      23) Neck
      24) Poll
      25) Ear
      26) Snout
      27) Nostril

c. Sheep

1) Shoulder
2) Breast
3) Elbow
4) Fore shank
5) Knee
6) Fetlock
7) Pastern
8) Coffin
9) Fore flank
10) Belly
11) Last Rib
12) Rear flank
13) Body
14) Hoof
15) Cannon bone
16) Hock
17) Stifle
18) Leg of lamb
19) Dock
20) Rump
21) Hip
22) Loin
23) Ribs
24) Back or rack
25) Top of shoulder
26) Neck
27) Poll
28) Forehead
29) Face
30) Nose
31) Mouth

d. Dairy Cow

1) Heart girth
2) Brisket
3) Elbow
4) Knee
5) Fetlock
6) Pastern
7) Coffin
8) Barrel
9) Mammary veins
10) Flank
11) Udder
12) Teats
13) Hoof
14) Dewclaw
15) Switch
16) Hock
17) Stifle
18) Thigh
19) Rear udder attachment
20) Pin bones
21) Tail head
22) Rump
23) Thurl
24) Hip
25) Back
26) Loin
27) Chine
28) Ribs
29) Crops
30) Withers
31) Neck
32) Horn
33) Poll
34) Forehead
35) Face
36) Nose
37) Nostril
38) Muzzle
39) Dewlap
40) Shoulder

e. Horse
1) Forehead
2) Face
3) Bridge of nose
4) Nostril
5) Muzzle
6) Upper lip
7) Lower lip
8) Under lip
9) Throat latch
10) Poll
11) Crest
12) Neck
13) Point of shoulder
14) Chest
15) Arm
16) Elbow
17) Forearm
18) Knee
19) Cannon
20) Ankle
21) Pastern
22) Coronet
23) Fetlock
24) Girth
25) Shoulder
26) Barrel
27) Abdomen
28) Hoof
29) Hock
30) Gaskin
31) Stifle
32) Flank
33) Buttock
34) Point of hip
35) Croup
36) Loin
37) Back
38) Withers
39) Thigh

4. a. Beef
1) Desirable
2) Undesirable
b. Swine
1) Desirable
2) Undesirable
c. Sheep
1) Desirable
2) Undesirable
d. Dairy Cow
1) Desirable
2) Undesirable

5. a. Beef
1) Rump
2) Round
3) Shank
4) Loin
5) Flank
6) Rib
7) Plate
8) Chuck
9) Fore shank
10) Brisket

b. Swine

1) Jowl
2) Boston butt
3) Picnic
4) Back
5) Side
6) Loin
7) Rump
8) Ham

c. Sheep

1) Leg
2) Sirloin
3) Loin
4) Rack
5) Shoulder
6) Breast

6. a. Beef

Brisket--5%
Chuck--26%
Rib--9%
Short loin--8%
Sirloin--9%
Round--23%
Flank--5%
Plate--8%
Shank--4%

b. Sheep

Shank--4%
Loin--11%
Rack--12%
Breast and flank--13%
Leg (Sirloin on)--33%
Shoulder--24%

c. Swine

Jowl--3%
Picnic--8.5%
Spareribs--3%
Side--17.5%
Ham--18.5%
Loin--15%
Boston butt--6.5%

7. Any ten comparative advantages and criticism terms listed under #7 on information sheet for either beef, swine, or sheep.

8. Evaluated to the satisfaction of the instructor.

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

TERMINAL OBJECTIVE

After completion of Unit VIII, the student should be able to select livestock using the results of performance testing, and according to their genetic makeup. He should be able to identify the different systems of breeding livestock and sleect the method that would most nearly fit into his farming operation. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of **instruction, the student should be able to:**

1. Match terms associated with selecting and breeding livestock to the correct definition.
2. Name five hereditary characteristics that are determined by genes.
3. Name the number of chromosome pairs for the following species; cattle, sheep, swine, humans, and chickens.
4. Discuss in a short paragraph when the genetic makeup of an individual is determined.
5. Distinguish between dominant and recessive genes.
6. Name three examples of dominant genes.
7. Distinguish between simple gene inheritance and multiple gene inheritance.
8. Name the color inheritance of the offspring when given the mating combinations.
9. Discuss in a short paragraph how the sex of the offspring is determined.
10. Define dwarfism as it relates to livestock breeding.
11. Distinguish between performance testing and progeny testing and indicate how each one plays a part in production testing.
12. Match the terms indicating the different systems of breeding livestock to the correct definition.
13. Draw a diagrammatic illustration showing the inheritancy of horns in cattle.
14. Demonstrate the ability to diagram (using checkerboard procedure) all possible gene combinations when given the matings.

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Make transparencies.

   D. Discuss terminal and specific objectives with students.

   E. Discuss information and assignment sheets with students.

   F. Arrange field trip to allow students an opportunity to see the different livestock breeding operations.

   G. Give test.

II. Students:

   A. Read objective sheet.

   B. Study information sheets.

   C. Work assignment sheets and turn in to instructor for grading.

   D. Participate in field trip.

   E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objective sheet

   B. Information sheets

   C. Tranparency masters

      1. TM 1 - Gene Hereditary Characteristics

      2. TM 2 - Sex Determination

   D. Assignment sheets

      1. Assignment Sheet #1 - Draw a Diagrammatic Illustration Showing the Inheritance of Horns in Cattle for the F_1 and F_2 Generations

      2. Assignment Sheet #2 - Estimate the Possible Gene Combinations Using the Checkerboard Procedure

   E. Answers to assignment sheets

F. Test

G. Answers to test

II. References:

A. Ensiminger, M.E. Animal Science. Danville, Illinois: The Interstate Printers and Publishers, Inc.

B. Ensminger, M.E. Stockman's Handbook. Danville, Illinois: The Interstate Printers and Publishers, Inc.

C. Ensminger, M.E. Beef Cattle Science. Danville, Illinois: The Interstate Printers and Publishers, Inc.

D. Genetics. Overhead Transparency Masters, California State Polytechnic College, San Luis Obispo, Clifornia.

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

INFORMATION SHEET

I. Terms and definitions

   A. Genes - The complex protein molecules that determine all of the hereditary characteristics of living animals located at definite points on the chromosomes

   B. Chromosomes - The thread-like sturctures which exist in pairs and carry genes

   C. Mutation - The changes that take place in a gene

   D. Mitosis - A division of the body cells

   E. Meiosis - A division of the sex cells

   F. Genetics - A branch of biology that deals with the heredity and variation of organisms

   G. Gametes - The mature germ cells

   H. Fertilization - the union of two unlike gametes

   I. Zygote - The result of the union of two unlike gametes

   J. Homozygous - An animal that is pure for a certain characteristic such as the polled characteristic

   K. Heterozygous - An animal that is a carrier of one dominant and one recessive factor

   L. Phenotype - A classification determined by senses (An example is tall or dwarf, polled or horned.)

   M. Genotype - A classification from the genetic formula (An example is Dd, Tt, or tt.)

   N. Letal genes - Refers to a genetic factor that causes death of the young, either during prenatal life or at birth

   O. Copulation - The physical union of the two sexes

   P. F_1 Generation - The first generation out of a cross of two animals of different breeds

   Q. F_2 Generation - The generation of crossing two F_1 animals.

II. Hereditary characteristics determined by genes (Transparency I)

   A. Body size

   B. Color of hair coat

   C. Ability to fatten

   D. Eye color

   E. Length of leg

III. Chromosome pairs of species

A.	Cattle 30	E.	Humans 23
B.	Swine 40	F.	Horse 30
C.	Sheep 27	G.	Goat 30
D.	Chicken 6	H.	Rat 21

(NOTE: With all possible combinations in chromosome pairs and genes, the livestock specie can transmit over one billion different samples of inheritance. Therefore, this is why no two animals within a given breed are exactly alike except identical twins.)

IV. Genetic makeup determined

A. By the union of two cells

B. One from each parent

(NOTE: These two germ cells indicate whether a calf will be polled instead of horned; black instead of white; a bull instead of a heifer.)

V. Genes

A. Dominant - Genes that have the ability to cover up or mask the the presence of one member of a set in the F_1 generation

(NOTE: Dominance is usually designated by a capital letter.)

B. Recessive - Genes that are covered up or masked in the F_1 generation

(NOTE: Recessive genes are usually designated by a small letter.)

VI. Examples of dominant genes

A. Pure polled = D (Horned = d)

B. Red color in shorthorns = D

C. White face in herefords = D

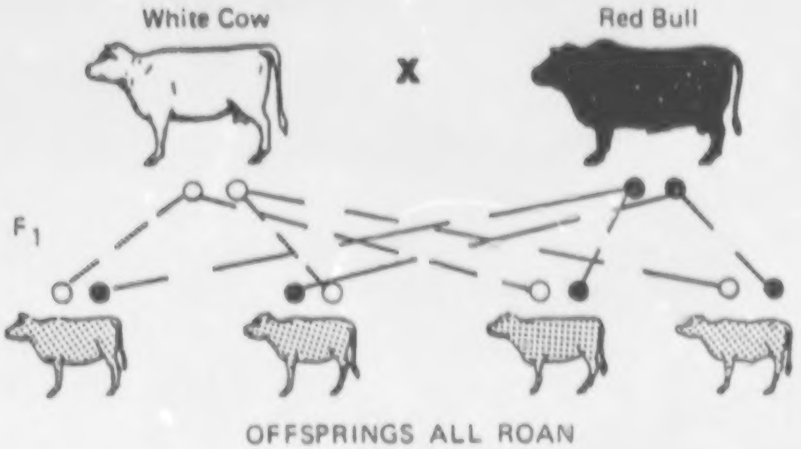
D. Lop ears in swine = D

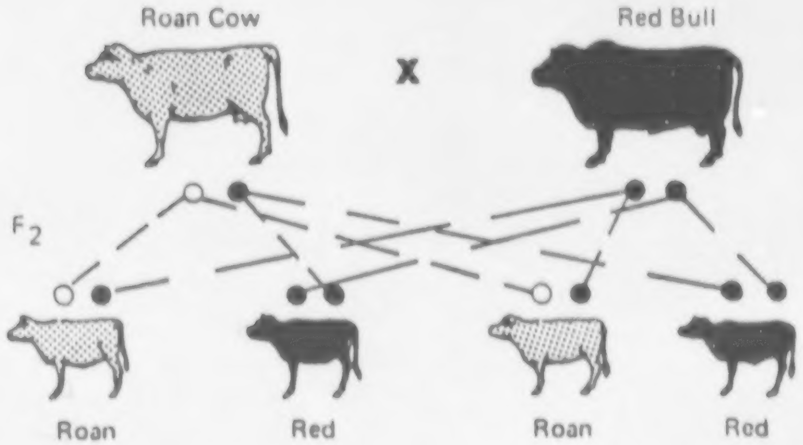
VII. Gene inheritance

A. Simple

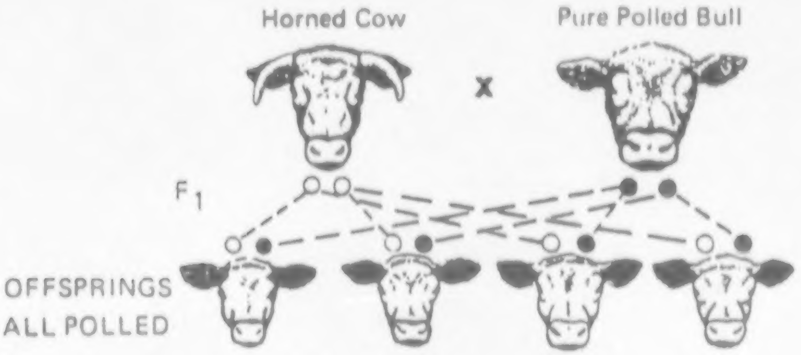
1. One pair of genes involved

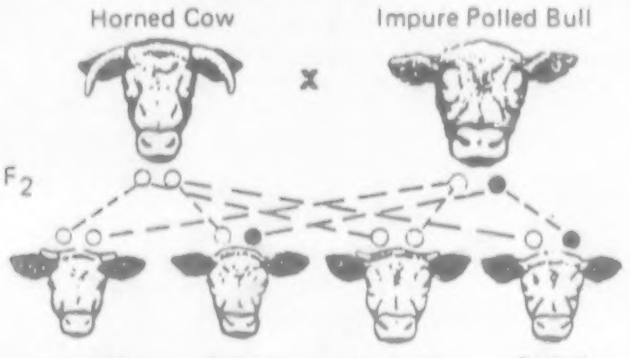
2. Diagrammatic illustration of the inheritance of color (Shorthorn)


White Cow
x
Red Bull
F1
OFFSPRINGS ALL ROAN


Roan Cow
x
Red Bull
F2
Roan
Red
Roan
Red

3. Diagrammatic illustration of the inheritance of horns


Horned Cow
x
Pure Polled Bull
F1
OFFSPRINGS
ALL POLLED


Horned Cow
x
Impure Polled Bull
F2
Horned
Polled
Horned
Polled

4. Checkerboard system
   a. Dominant male (Polled) X Recessive female (Horned)
   b. Example of calculations

      Male genes

	P	P
p	Pp	Pp
p	Pp	Pp

      F_1 Genotypic ratio 0:4:0
      F Phenotypic all polled

   c. Example of calculations (Modified Two Pair Ratios, F_1 and F_2)

      Parents PBPB (Polled, Black) X pwpw (Horned White)

      F_1 PBpw

      PBpw X PBpw

      Gametes: Male PBPw pWpw
      Female PBPw pWpw

B. Multiple
   1. Work of several pairs of genes
   2. Genes affecting
      a. Meat production
      b. Milk and butterfat production
      c. Growth rate

      (NOTE: Growth rate is hard to identify and is controlled by several genes.)

VIII. Color inheritance
   A. Swine
      1. Black breed (Poland China) X White breed (Chester White, Yorkshire or Landrace) - Offspring will be white with black spots.
      2. Black breed (Poland China) X Red breed (Duroc) - Offspring will be black and red spotted.
      3. Red breed X White breed - Offspring are usually belted, with some being solid black.

4. Belted breed X Red or Black breed - Offspring are usually belted, with some being solid black.

B. Cattle

1. Purebred Angus (black) X purebred Hereford - Offspring will be black with white face.
2. Brahman (steel gray) X Shorthorn (red) - Offspring will be red.
3. Charolais X Purebreed Hereford-Offspring will be cream-colored, usually with a white face
4. Charolais X Angus-Offspring will usually be a cream to a smoky color

IX. Sex determined (Transparency 2)

A. By chromosomal makeup

B. One pair of chromosomes called sex chromosomes

C. Female pair known as the X chromosomes

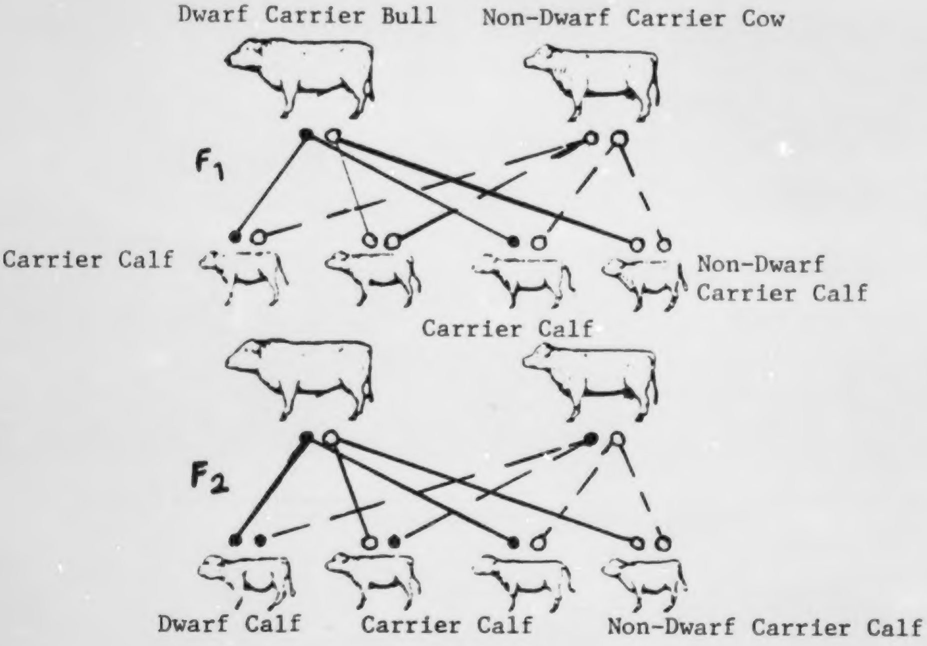
D. Male has a pair of unlike chromosomes known as X and Y

E. The sex chromosomes separate when germ cells form

F. Sperm and egg unite randomly

(NOTE: On the average the progeny will contain the chromosomal makeup X X females and the other half X Y males.)

X. Dwarfism - An inherited characteristic of cattle caused by a genetic origin but not carried by the sex chromosomes; it applies to any given calf having (1) one carrier parent (2) both carrier parents.


Dwarf Carrier Bull
Non-Dwarf Carrier Cow
F1
Carrier Calf
Non-Dwarf Carrier Calf
Carrier Calf
F2
Dwarf Calf
Carrier Calf
Non-Dwarf Carrier Calf

XI. Production testing - The practice of evaluating and selecting animals on the basis of progeny and performance testing

A. Performance testing - The practice of evaluating and selecting animals on the basis of their individual merit or performance

(NOTE: This test applies to the measurement of an animal's ability to grow, convert feed to gain, produce and wean a calf, or to yield a high-quality carcass. In order for this test to be of value, the animal should be compared to the performance of other animals of the same age being fed and handled under similar conditions.)

B. Progeny testing - The practice of selecting animals on the basis of the merit of their progeny (offspring)

(NOTE: In order for this type of test to be of value, several animals should be evaluated.)

XII. Systems of breeding

A. Purebred animal - A member of a breed; the animals which possess a common ancestry and distinctive characteristics and are either registered or eligible for registry in the herd book of that breed

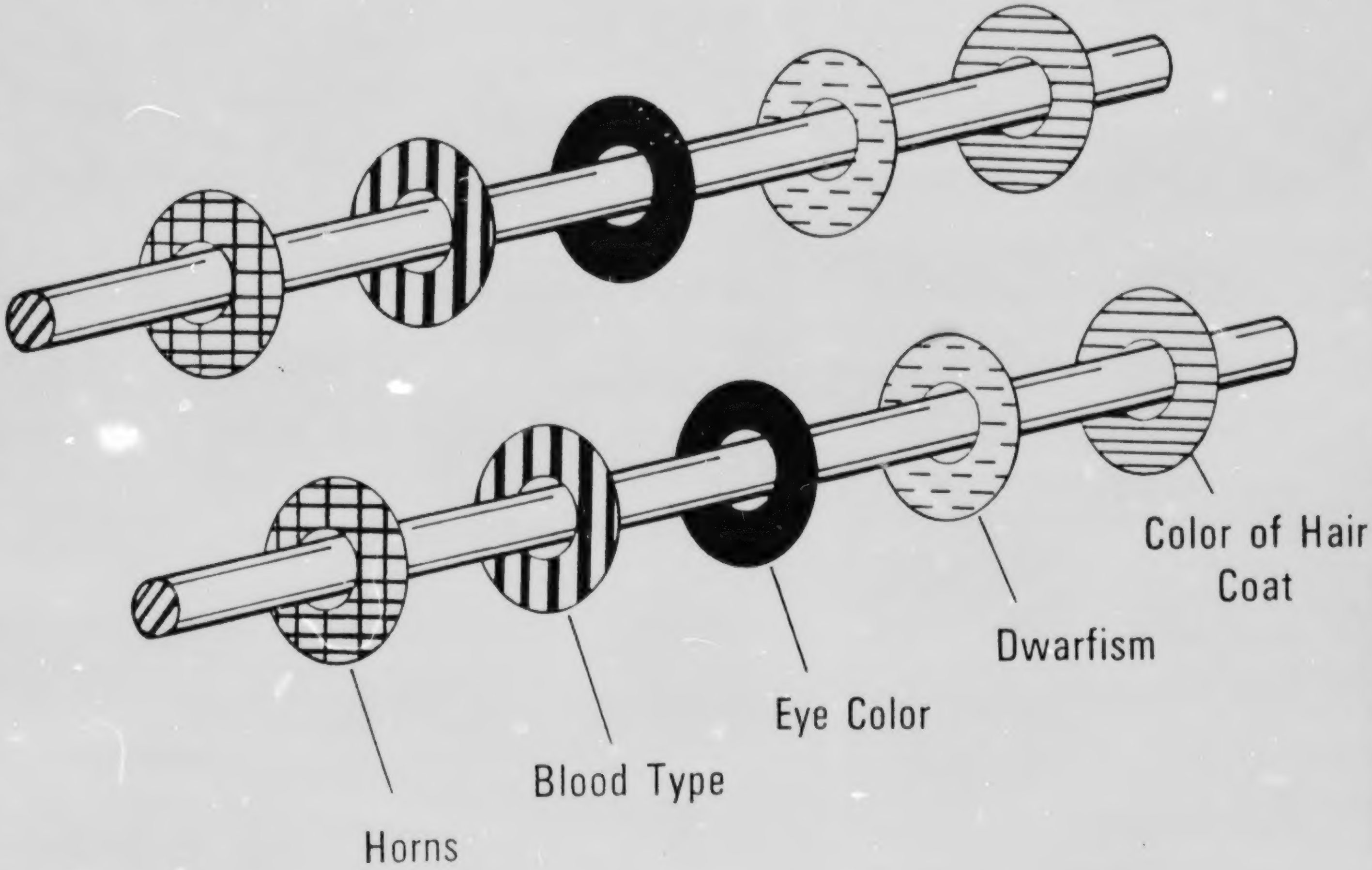
B. Inbreeding or closebreeding - A system of breeding in which closely related animals are mated

C. Outcrossing - The mating of animals that are members of the same breed but which show no relationship close up in the pedigree

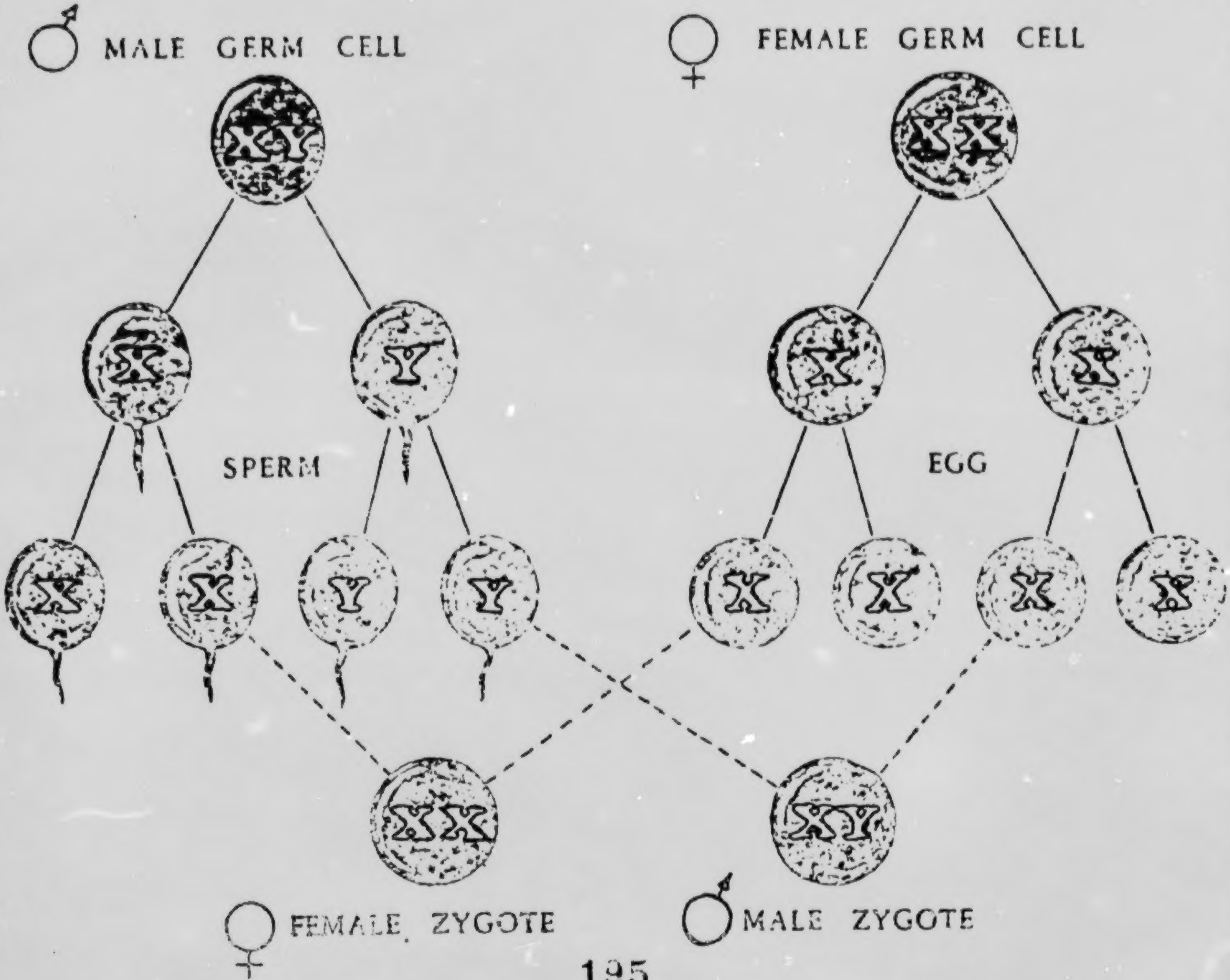
D. Grading up - A system of breeding in which purebred sires of a given pure breed are mated to native or grade females.

E. Crossbreeding - The mating of animals of different breeds

Gene Hereditary Characteristics


Color of Hair
Coat
Dwarfism
Eye Color
Blood Type
Horns

SEX DETERMINATION IN ANIMALS


♂ MALE GERM CELL
♀ FEMALE GERM CELL
XY
XX
X
Y
X
X
SPERM
EGG
X
X
Y
Y
X
X
X
X
XX
XY
♀ FEMALE ZYGOTE
♂ MALE ZYGOTE

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

ASSIGNMENT SHEET #1 - Draw a Diagrammatic Illustration Showing the Inheritance of Horns in Cattle for the F_1 and F_2 Generations

Suppose you mated a pure polled bull having dominant genes (PP) to a horned cow having recessive genes (pp). What would be the offspring's gene combinations? Show these combinations by diagrammatic illustration for the F_1 and F_2 generations.

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

ASSIGNMENT SHEET #2 - Estimate the Possible Gene Combinations Using the Checkerboard Procedure

Calculate each possible gene combination from the following matings. When completed, turn in to instructor for his evaluation.

1. In Angus cattle, black hair color (B) is dominant over red hair color (b). What will be the gene combinations of the offspring from this mating?

a. BB male X BB female

What will the F_1 genotypic ratio be?______________

What will the F_1 phenotypic ratio be?______________

b. Bb male X bb female

What will the F_1 genotypic ratio be?___________

What will the F_1 phenotypic ratio be?___________

c. Bb male X BB female

What will the F_1 genotypic ratio be?__________

What will the F_1 phenotypic ratio be?__________

d. bb male X bb female

What will the F_1 genotypic ratio be?__________

What will the F_1 phenotypic ratio be?__________

2. Suppose you mated a polled cow (P) to a horned bull (p). What will be the offspring's gene combinations?

What will the F_1 genotypic ratio be?__________

What will the F_1 phenotypic ratio be?__________

3. Suppose you mated a polled cow with a recessive gene for horns (Pp) to a horned bull (pp). What would be the gene combination of the offspring?

What will the F_1 genotypic ratio be?__________

What will the F_1 phenotypic ratio be?__________

4. Suppose you mated a polled bull carrying a recessive gene for horns (Pp) to a like cow. What would be the gene combination of the offspring?

What will the F_1 genotypic ratio be?__________

What will the F_1 phenotypic ratio be?__________

5. a. Suppose you made a cross of a bull carrying tall genes (DD) to a cow carrying dwarf genes (dd). What would be the F_1 gene combination of the offspring? ____________

b. Using a bull from the cross above carrying genes for tall with a recessive gene for dwarf (Dd) to a female with like genes, what would be the F_2 gene combination of the offspring?

How many animals would be pure for tall? ____________

How many animals would be tall? ____________

How many animals would be dwarf? ____________

6. Suppose you had a cross involving two pairs of genes for a F_1 and F_2 generation. The bull carried the dominant genes (DDTT) and the cow the recessive genes (ddtt). What would the F_1 generation cross be?

When crossing the offspring of the F_1 generation, what will be the possible gametes in the F_2 generation?

○ ○ ○ ○ ○ ○ ○ ○

What would be the random assortment of the offspring?

7. Suppose you were crossing a modified two-pair ratio and wanted to determine the offspring combination of the F_1 and F_2 generation. The bull carried the polled red dominant genes (PPRR) and the cow carried the recessive genes (pprr) for horned white. Answer each of the following questions and show your work.

   a. What would be the gametes of each parent?

      Male ________________

      Female ________________

   b. What would be the gene combination of the F_1 offspring?

      ____

   c. By crossing the F_1 offspring, what would be the gametes of each parent?

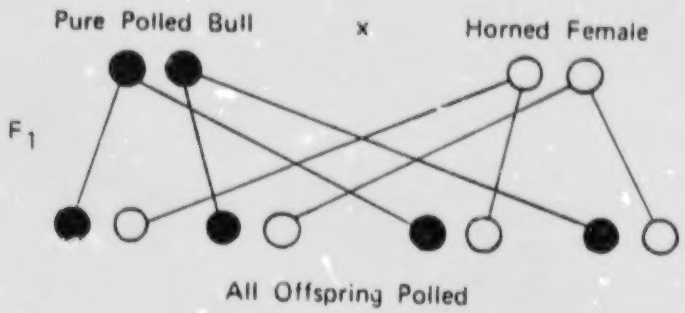
   d. What eould be the F_2 random assortment of gene combinations?

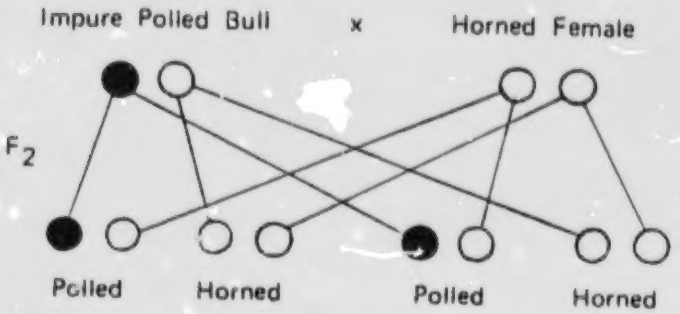
      (NOTE: Also indicate whether horned or polled and the color combination.)

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

ANSWERS TO ASSIGNMENT SHEETS

A. Assignment Sheet #1


Pure Polled Bull
x
Horned Female
F1
All Offspring Polled


Impure Polled Bull
x
Horned Female
F2
Polled
Horned
Polled
Horned

B. Assignment Sheet #2

1. a.

	B	B
B	BB	BB
B	BB	BB

Genotypic ratio	0:4:0
Phenotypic ratio	All black

b.

	B	b
b	Bb	bb
b	Bb	bb

Genotypic ratio	0:2:2
Phenotypic ratio	1/2 black 1/2 red

c.

	B	b
B	BB	Bb
B	BB	Bb

Genotypic ratio 0:2:2

Phenotypic ratio All black

d.

	b	b
b	bb	bb
b	bb	bb

Genotypic ratio 0:4:0

Phenotypic ratio All red

2.

	p	p
P	Pp	Pp
P	Pp	Pp

Genotypic ratio 0:4:0

Phenotypic ratio All polled

3.

	p	p
p	Pp	Pp
p	pp	pp

Genotypic ratio 0:2:2

Phenotypic ratio 1/2 polled
1/2 horned

4.

	P	p
P	PP	Pp
p	Pp	pp

Genotypic ratio 1:2:1

Phenotypic ratio 1 pure polled
2 polled
1 pure horned

5. a.

	D	D
d	Dd	Dd
d	Dd	Dd

a. Dd

b.

	D	d
D	DD	Dd
d	Dd	dd

b. 1 pure tall
2 tall
1 dwarf

6. Gametes DT dt

F_1 generation DTdt

Gametes of F_2 DT Dt dT dt
DT Dt dT dt

Random assortment of gene combinations

	DT	Dt	dT	dt
DT	DTDT	DTDt	DTdT	DTdt
Dt	DtDT	DtDt	DtdT	Dtdt
dT	dTDT	dTDt	dTdT	dTdt
dt	dtDT	dtDt	dtdT	dtdt

7. a. Male PR

Female pr

b. RRpr

c. Gametes PR Pr pR pr
PR Pr pR pr

Random assortment of gene combinations

	PR	Pr	pR	pr
PR	PRPR polled red	PRPr polled roan	PRpR polled red	PRpr polled roan
Pr	PrPR polled roan	PrPr polled white	PrpR polled roan	Prpr polled white
pR	pRPR polled red	pRPr polled roan	pRpR horned red	pRpr horned roan
pr	prPR polled roan	prPr polled white	prpR horned roan	prpr horned white

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

TEST

1. Match the terms on the right to the correct definition. (NOTE: Teacher may want to rearrange both lists.)

_____a. The mature germ cells

_____b. The result of the union of two unlike gametes

_____c. A classification determined by senses (Example: tall or dwarf; horned or polled)

_____d. The complex protein molecules that determine all the hereditary characteristics of living animals located at definite points on the chromosomes

_____e. A branch of biology that deals with the heredity and variation of organisms

_____f. An animal that is a carrier of one dominant and one recessive factor

_____g. The thread-like structures which exist in pairs and carry genes

_____h. A division of the body cells

_____i. A classification from the genetic formula (Example: Dd, Tt, or tt)

_____j. An animal that is pure for a certain characteristic, such as the polled characteristic

_____k. The changes that take place in genes

_____l. A division of the sex cells

_____m. Refers to a genetic factor that causes death of the young, either during prenatal life or at birth

_____n. The union of two unlike gametes

1. Gametes
2. Fertilization
3. Zygote
4. Homozygous
5. Heterozygous
6. Phenotype
7. Genotype
8. Lethal genes
9. Genes
10. Chromosomes
11. Mutation
12. Mitosis
13. Meiosis
14. Genetics
15. Copulation
16. F_1 Generation
17. F_2 Generation

_____o. The physical union of the two sexes

_____p. The first generation out of a cross of two animals of different breeds

_____q. The generation of crossing two F_1 animals

2. Name five hereditary characteristics that are determined by genes.

   a.

   b.

   c.

   d.

   e.

3. Name the number of chromosome pairs for the following.

   a. Cattle______

   b. Sheep ______

   c. Swine ______

   d. Humans ______

   e. Chickens ______

   f. horse ______

   g. goat ______

   h. rat ______

4. Discuss in a short paragraph when the genetic makeup of an individual is determined.

5. Distinguish between dominant and recessive genes. Place a "D" in the blank if the statement indicates a dominant characteristic of an "R" in the blank if the statement indicated a recessive characteristic.

   a.______ Genes that are covered up or masked in the F_1 generation.

   b.______ Genes that have the ability to cover up or mask the presence of one member of a set in the F_1 generation

6. Name three examples of dominant genes.

   a.

   b.

   c.

7. Distinguish between simple gene inheritance and multiple gene inheritance. Place "SG" in the blank if the statement indicates a simple gene inheritance or "MG" in the blank if the statement indicates a multiple gene inheritance.

   _____a. An association whereby only one part of genes are involved.

   ______b. An association whereby several pairs of genes are involved.

8. What would be the color inheritance of the following matings?

   a. Purebred Angus (black) X Purebred Hereford ____________

   b. Black breed (Poland China) X Red breed (Duroc) ____________

   c. Swine belted breed X Red or Black breed __________

   d. Brahman (steel gray) X Shorthorn (red) __________

9. Discuss in a short paragraph how the sex of the offspring is determined.

10. Define dwarfism as it relates to livestock breeding.

11. Distinguish between performance testing and progeny testing. Write in the blank provided if the statement indicates progeny testing.

   a. __________ A practice of selecting animals on the basis of the merit of their progeny (offspring)

   b. __________ A practice of evaluating and selecting animals on the basis of their individual merit or performance

   c. Discuss how each one of the above methods of testing livestock applies to production testing.

12. Match the terms indicating the different systems of livestock breeding to the correct definition.

   _____a. A system of breeding in which closely related animals are mated

   _____b. The mating of animals that are members of the same breed but show no relationship close up in the pedigree

   1. Crossbreeding

   2. Prebred animal

   3. Inbreeding or closebreeding

_____c. A member of a breed; animals which possess a common ancestry and distinctive characteristics and are either registered or elibigle for registry in the herd book of that breed

_____d. The mating of animals of different breeds

_____e. A system of breeding in which purebred sires of a given breed are mated to native or grade females

4. Grading up
5. Outcrossing

13. Draw a diagrammatic illustration showing the inheritancy of horns in cattle for the F_1 and F_2 generations.

14. Suppose in your breeding program you mated a polled bull (Pp) carrying a recessive gene for horns to a polled cow (Pp) carrying a recessive gene for horns? What would be the gene combination of the offspring?

    a. How many pure polled? ____________

    b. How many polled with recessive genes for horns? ____________

    c. How many pure horned? ____________

FUNDAMENTALS OF ANIMAL GENETICS
UNIT VIII

ANSWERS TO TEST

1. 1 a.
   3 b.
   6 c.
   9 d.
   14 e.
   5 f.
   10 g.
   12 h.
   7 i.
   4 j.
   11 k.
   13 l.
   8 m.
   2 n.
   15 o.
   16 p.
   17 q.

2. a. Body size
   b. Color of hair coat
   c. Ability to fatten
   d. Eye color
   e. Length of leg

3. a. Cattle 30
   b. Sheep 27
   c. Swine 40
   d. Humans 23
   e. Chickens 6
   f. Horses 30
   g. Goat 30
   h. Rat 21

4. The discussion should mention that the genetic makeup is determined by the union of two cells, one from each parent. These germ cells indicate whether a calf will be polled instead of horned or black instead of white.

5. __R__ a.

   __D__ b.

6. (NOTE: This may include many others which may have been covered in the class discussion and will have to be answered to the satisfaction of the instructor.)

   a. Polled

   b. Red color in shorthorns

   c. Lop ears in swine

7. __SG__ a.

   __MG__ b.

8. a. Black with white face
   b. Black and red spotted
   c. Offspring will be belted
   d. Red

9. The discussion should indicate that sex is determined by the chromosomal makeup of the individual. The female produces a pair of unlike chromosomes known as X and Y.

10. Dwarfism is an inherited characteristic of cattle caused by a genetic origin but not carried by the sex chromosomes; it applies to any given calf having (1) one carrier parent (2) both carrier parents.

11. a. Progeny testing
    b. Performance testing
    c. A combination of both where animals are evaluated and selected on the basis of progeny and performance testing.

12. __3__ a.
    __5__ b.
    __2__ c.

__1__ d.

__4__ e.

13. Evaluation to the satisfaction of the instructor

14. a. one
    b. two
    c. one

	P	p
P	PP	Pp
P	Pp	pp

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

TERMINAL OBJECTIVE

After completion of Unit VII, the student should be able to determine when to market his livestock in order to make the most profit by studying and interpreting market information and by being able to recognize how livestock price trends and cycles fluctuate during the year. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of instruction, the student should be able to;

1. Match ten terms associated with price trends and cycles to the correct definition.
2. Name two main factors that cause livestock prices to fluctuate.
3. Name two ways in which progressive stockmen use seasonal market changes.
4. Name four factors that can and do affect the normal season high and low market prices.
5. Name and discuss the four types of price variation.
6. Select the months of the year when it would be most profitable to market and/or purchase cattle, sheep, and swine.
7. Demonstrate the ability to collect and interpret market information from a local livestock auction and the terminal market in Dodge City or another terminal market.

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

SUGGESTED ACTIVITIES

I. Instructor:
   - A. Provide students with objective sheet.
   - B. Provide students with information and assignment sheets.
   - C. Discuss terminal and specific objectives.
   - D. Discuss information and assignment sheets.
   - E. Arrange field trip to allow students an opportunity to see how livestock prices fluctuate.
   - F. Give test.

II. Students:
   - A. Read objectives.
   - B. Study information sheets.
   - C. Work assignment sheets and turn in to instructor for grading.
   - D. Participate in field trip.
   - E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   - A. Objectives
   - B. Information sheets
   - C. Assignment sheets
     - 1. Assignment Sheet #1 - Collect and Interpret the Dodge City Livestock Market Information From a Newspaper.
     - 2. Assignment Sheet #2 - Collect and Interpret the Local Livestock Auction Market Information.
   - D. Test
   - E. Answers to test

II. References:

A. Ensminger, M.E. Animal Science, Danville, Illinois: The Interstate Printers and Publishers, Inc.

B. Competitive Livestock Marketing. College Station, Texas: Agricultural Education Teaching Materials Center.

C. Fowler, Stewart H. Beef Production in the South. Danville, Illinois: The Interstate Printers and Publishers, Inc.

D. Bundy, Clarence E. and Ronald V. Diggins. Beef Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

E. McCoy, John H., Livestock and Meat Marketing, The AVI Publishing Company, Inc.

F. Cattle Price Margins. Cooperative Extension Service, Kansas State University, Manhattan, Kansas SB-608

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

INFORMATION SHEET

I. Terms and definitions

   A. Supply - Refers to the number of livestock available for the day's trading market

   B. Demand - Refers to a buyer's desire to purchase a certain volume and also refers to his willingness and ability to buy.

   C. Demand is good - When buyers are more aggressive than usual or when large or increased supply shipments are bringing unchanged to higher prices

   D. Demand is poor - When buyers are less aggressive than usual or when decreased supplies are selling at unchanged to lower prices.

   E. Trading active - Sales are being made at a more rapid pace than usual for the particular market

   G. Trading slow - Sales are being made at a slower than normal pace for the particular market.

   H. Price - Refers to specific dollars and cents paid per hundred weight (cwt) for a given grade and weight selection.

   I. Seasonal price index - Indicates the usual price changed from month to month during the year based on prices over a number of years.

   J. Price cycle-- That period of time during which the price of a certain kind of livestock advances from a low point to a high point and then declines to a low point again.

II. Factors causing price fluctuation

   A. Supply - Number produced and marketed at a given time and place

   B. Demand - Measured by quantity purchased and price

   C. Supply and demand balanced - Prices are stable

III. Ways to use seasonal market changes

   A. Guide on which to make management decisions

   B. Planning buying and selling operation

IV. Factors affecting seasonal high and low market prices.

   A. Federal farm programs and controls

   B. Business conditions and general price levels

C. Feed supplies and water conditions

D. Wars

V. Price variation

A. Long-time trends - Covers level of prices over a long period of time; usually caused by economic conditions

B. Cyclical - Refers to the time period during which the price for a certain species of livestock advances from a low point to a high and then returns to a low point; caused by the change in the number of livestock slaughtered

C. Seasonal - Refers to the price of cattle during the twelve-month period whether at a high or a low rate; caused by the number of livestock marketed

D. Short-time and irregular - Refers to the fluctuation of prices day-to-day or from week-to-week; caused by the decision of large numbers of producers to sell today, tomorrow, this week, or next week

VI. When to buy and sell livestock

A. Cattle and heifers

1. Slaughter steers

a. Today's market for slaughter steers has no reliable seasonal pattern, although in recent years there is a tendency for slightly higher prices in spring months.

b. Price spread between Prime and Choice is the widest from January through April.

2. Cows

a. Highest prices are from March to July

b. Lowest prices are from October to February

(NOTE: This is due to the heavy run of grass cattle in the late fall.)

3. Feeder

a. Highest prices are from March to May; lowest prices are in December.

(NOTE: December reflects relatively high marketings and a slackening in demand, and the March to May high is reflecting demand for steers to go on grass and into feedlots.)

b. Feeder cattle receipts are greatest in the fall.

B. Sheep

1. Slaughter lambs
    - a. Highest prices typically are in May and June; lowest prices are from August to January.
    - b. Early spring lambs have price advantages
2. Feeder lambs
    - a. Highest prices are from March to April

      (NOTE: Very few lambs are available to take advantage of this high price.)
    - b. Lowest prices are from June through August.

      (NOTE: A feeder must buy lambs when they are available and must market them before they become too old and heavy.)

C. Swine

1. Market barrows and gilts
    - a. Highest prices are from June through August; lowest markets are in November, December, March, and April.
    - b. The bulk of spring and early summer pigs farrowed are marketed in November to May.

      (NOTE: This is what normally causes the lowest prices of the year.)
    - c. Take advantage of high prices
        1. Regulate farrowing dates of sows
        2. Control feedling to correspond with high price markets
2. Sows
    - a. Highest prices are in July to August and February

      (NOTE: This is brought about because of the bulk of spring farrowing, then following weaning sows are marketed.)
    - b. Lowest prices are in December
3. Feeder pigs
    - a. Highest prices are from February through April
    - b. Lowest prices are in July

VII. Market information service

A. Administered by the USDA Agricultural Marketing Service and the Economic, Statistics, and Cooperatives Service.

B. Purpose - To collect and disseminate timely, accurate market reports.

C. Covers all areas and phases of the livestock industry

1. Weekly auctions
2. Terminal markets
3. Special feeder auctions
4. Packers
5. Feedlots

D. Source of market information

1. Newspapers
2. Radio and television
3. Farm magazines
4. Direct telephone

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

ASSIGNMENT SHEET #1 - Collect and Interpret the Local Terminal Livestock Market Information from a Newspaper

Using the statements below collect the livestock market information from a newspaper showing yesterday's receipts and prices. When completed, turn in to the instructor for his evaluation.

Cattle and calves No.____________head

Activity of the market ____________

Price range

Slaughter steers____________

Weights ____________

Weights ____________

Slaughter heifers____________

Weights ____________

Weights ____________

Slaughter cows ____________

Bulls ____________

Slaughter calves __________

Feeder cattle ___________

Feeder calves ___________

Cow-calf pairs ___________

Hogs No. _____________Head

Activity of market ____________

Price range

U.S. No. 1 _____________ Weight _____________

U.S. No. 2 _____________ Weight _____________

U.S. No. 3 ______________ Weight _____________

U.S. No. 4 ______________ Weight _____________

Sows ________________

Sheep No. ____________ head

Activity of market ____________

Price range

Slaughter ewes ____________

Feeder lambs ____________

Slaughter lambs ___________

ASSIGNMENT SHEET #1 - Collect and Interpret Livestock Information

Price Per Unit

Commodity____________________ Market____________________ Year____________________

Price Per Unit

Week Ending

January	February	March	April	May	June	July	August	September	October	November	December
6 13 20 27	3 10 17 24	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24	1 8 15 22 29

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

ASSIGNMENT SHEET #2 - Collect and Interpret the Local Livestock Auction Market Information

Using the statments below, collect the livestock market information by a visit to the auction or from a source of news media, When completed, turn in to the instructor for his evaluation.

Cattle and calves No. ____________ head

Activity of the market ____________

Price range

Slaughter steers ____________

Weights ____________

Weights ____________

Slaughter heifers ________________

Weights ____________

Weights ____________

Slaughter cows ____________

Bulls ________________

Slaughter calves ______________

Feeder cattle ______________

Feeder calves ______________

Cow-calf pairs ______________

Hogs No. ______________ head

Activity of market ____________

Price range

U.S. No.1 ______________ Weight ______________

U.S. No.2 ______________ Weight ______________

U.S. No.3 ____________ Weight ______________

U.S. No.4 ____________ Weight ______________

Sows _____________

Sheep No. ____________ head

Activity of market ____________

Price range

Slaughter ewes ____________

Feeder lambs ______________

Slaughter lambs ___________

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

TEST

1. Match the terms on the right to the correct definition.

_____a. Refers to the number of livestock available for the day's trading market

_____b. Refers to a buyer's desire to purchase a certain volume and also refers to his willingness and ability to buy

_____c. When buyers are more aggressive than usual or when large or increased supply shipments are bringing unchanged to higher prices

_____d. Sales are being made at a normal pace for the particular market

_____e. Indicates the usual price change from month to month during the year based on prices over a number of years

_____f. That period of time during which the price of a certain kind of livestock advances from a low point to a high point and then declines to a low point again

_____g. Sales are being made at a slower than normal pace for the particular market

_____h. When buyers are less aggressive than usual or when decreased supplies are selling at unchanged to lower prices

1. Price cycle
2. Seasonal price index
3. Demand is poor
4. Demand is good
5. Trading slow
6. Supply
7. Demand
8. Trading moderately
9. Price
10. Trading active

_____i. Refers to specific dollars and cents paid per hundred weight (cwt) for a given grade and weight selection

_____j. Sales are being made at a more rapid pace than usual for the particular market

2. Name two main factors that cause livestock prices to fluctuate.

   a.

   b.

3. Name two ways in which progressive stockmen use seasonal market changes.

   a.

   b.

4. Name four factors that can and do affect the normal season high and low market prices.

   a.

   b.

   c.

   d.

5. Name and discuss the four types of price variations.

   a.

   b.

   c.

   d.

6. Choose one of the following classes of livestock, and write a short paragraph on when to sell for the highest prices.

   slaughter cattle
   cows
   feeder cattle
   grass finished lambs
   feeder lambs
   market hogs
   sow
   feeder pigs

7. Choose one of the following classes of livestock, and write a short paragraph on when to buy for lowest prices.

   slaughter cattle
   cows
   feeder cattle
   feeder lambs
   market hogs
   sow
   feeder pigs

8. Demonstrate the ability to collect and interpret market information.

LIVESTOCK PRICE TRENDS AND CYCLES
UNIT VII

ANSWERS TO TEST

1. 6 a.
   7 b.
   4 c.
   8 d.
   2 e.
   1 f.
   5 g.
   3 h.
   9 i.
   10 j.

2. a. Supply
   b. Demand

3. a. Guide on which to make management decisions
   b. Planning buying and selling operation

4. a. Federal farm programs and controls
   b. Business conditions and general price levels
   c. Feed supplies and water conditions
   d. Wars

5. a. Long-time trends - Covers level of prices over a long period of time; usually caused by economic conditions.
   b. Cyclical - Refers to the time period during which the price for a certain species of livestock advances from a low point; caused by the change in the number of livestock slaughtered
   c. Seasonal - Refers to the price of cattle during the twelve-month period whether at a high or a low rate; cuased by the number of livestock marketed

d. Short-time and irregular - Refers to the fluctuation of prices from day-to-day or from week-to-week; caused by the decision of large numbers of producers to sell today, tomorrow, this week, or next week

6. Will be answered to the teacher's satisfaction.

7. Will be answered to the teacher's satisfaction.

8. Performance skills will be evaluated by the instructor.

MARKET GRADES AND CLASSES OF LIVESTOCK
UNIT V

TERMINAL OBJECTIVE

After completion of Unit V, the student should be able to identify the different grades and classes of cattle, sheep, and swine and classify them according to age, weight, and grade. He should demonstrate his ability to place feeder and slaughter grades on live animals. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of instruction, the student should be able to:

1. Match ten terms associated with market grades and classes of livestock to the correct definition.
2. Name four factors that determine market classes of cattle.
3. Name five factors that should be considered in selecting feeder cattle.
4. Name the five sex classes of cattle.
5. Match terms used to indicate approximate age ranges for cattle to the correct definition.
6. Identify slaughter and feeder grades of cattle.
7. Name five factors that determine market classes of sheep.
8. Name the three sex classes of sheep.
9. Match the terms that indicate age groups of sheep to the correct definition.
10. Identify the market grades of slaughter lambs.
11. Name four factors that determine market classes of swine.
12. Name the five sex classes of swine.
13. Identify feeder and slaughter grades of swine.
14. Demonstrate the ability to place feeder and slaughter grades on live animals.

MARKET GRADES AND CLASSES OF LIVESTOCK
UNIT V

SUGGESTED ACTIVITIES

I. Instructor:

A. Provide students with objective sheet.

B. Provide students with information and assignment sheets.

C. Discuss terminal and specific objectives.

D. Discuss information and assignment sheets.

E. Arrange field trip to allow students an opportunity to practice identifying slaughter and feeder grades of cattle, sheep, and swine.

F. Give test.

II. Students:

A. Read objectives.

B. Study information sheets.

C. Work assignment sheets and turn in to instructor for grading.

D. Participate in field trip.

E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

A. Objectives

B. Information sheets

C. Assignment Sheet #1 - Identify the Class while Placing Slaughter and Feeder Grades on Live Animals

D. Test

E. Answers to test

II. References:

A. Ensminger, M.E. Animal Science. Danville, Illinois: The Interstate Printers and Publishers, Inc.

B. Competitive Livestock Marketing. College Station, Texas: Agricultural Education Teaching Materials Center.

C. Official United State Standards for Grades of Slaughter Cattle. United State Department of Agriculture, Consumer and Marketing Service, Washington, D.C.

D. Official United States Standards for Grades of Feeder Cattle. United States Department of Agriculture, Consumer and Marketing Service, Washington, D.C.

MARKET GRADES AND CLASSES OF LIVESTOCK
UNIT V

INFORMATION SHEET

I. Terms and definitions

   A. Slaughter animal - An animal that is intended for immediate slaughter, or that is more suitable for slaughter than for any other purpose

   B. Grades of livestock - The relative degree of excellence; grade is the final subdivision in a classification for marketing any kind of livestock

   C. Classes of livestock - Identifies the purpose for which an animal is to be used

   D. Feeder animal - An animal that is intended for intensive feeding in preparation for slaughter

   E. Stocker animal - An animal that is intended for further growth for pasturing and rough feeding.

   F. Milkers and springers - Those cows recently freshened or soon due to calve, which are sold for milk purposes

   G. Slaughter calves - The calves that are between the ages of three months and one year, which have usually received grain in addition to milk, and which are fat enough for slaughter

   H. Feeder calves - The calves which are of weaning age and are sold to go back into the country for further growing or finishing

   I. Slaughter sheep - The yearlings or older animals intended for immediate slaughter

   J. Feeder sheep - The yearlings or older animals best suited for futher finishing

   K. Slaughter lambs - The young lambs under one year of age that are sufficiently fat for immediate slaughter

   L. Feeder lambs - The young lambs under one year of age that carry sufficient finish for slaughter purposes but which show indications of making good gains if placed on feed

   M. Shearer lambs - Those intended for shearing and further finishing prior to slaughtering

II. Factors determining market classes of cattle

   A. Use selection

   B. Sex

   C. Age

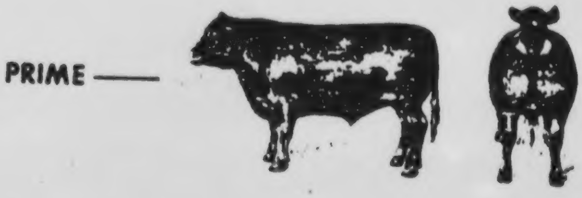
   D. Weight

III. Factors to consider in selecting feeder cattle
  A. Use selection
  B. Sex
  C. Age
  D. Thrift
  E. Natural fleshing
  F. Breeding
  G. Uniformity
  H. Absence of horns
  I. Temperament and disposition

IV. Sex classes of cattle
  A. Steer
  B. Heifer
  C. Cow
  D. Bull
  E. Stag

V. Age range of cattle
  A. Vealers - Cattle under three months of age
  B. Calves - Young cattle between the vealer and yearling stage
  C. Yearlings - Cattle from 12 to 24 months of age
  D. Two-year-old - Cattle from 24 to 36 months of age
  E. Older cattle - Cattle that are over 36 months of age

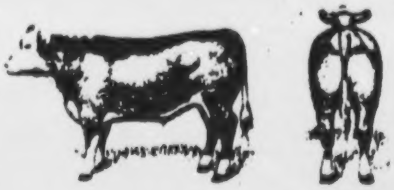
VI. Slaughter and feeder grades of cattle
  A. Slaughter
    1. Steers and heifers
      a. Prime



(NOTE: Slaughter cattle possessing the minimum qualifications for the Prime grade are thick muscled and thickly fleshed throughout. They are wide over the back, loin, and rump. The shoulders and hips are neatly laid in and smooth. There is a pronounced fullness or bulging over the crops, loin, and rump which contributes to a smooth, uniform width of top. Steers and heifers 30 to 42 months of age have a thick fat covering over the back, ribs, loin, and rump. The brisket flanks, and cod or udder appear full and distended. The fat covering tends to be smooth with only slight indications of patchiness. Steers and heifers under 30 months of age have a moderately thick but smooth covering of fat which extends over the ribs, loin, and rump. The brisket, flanks, and cod or udder show a marked fullness and the muscling is firm.)

b. Choice

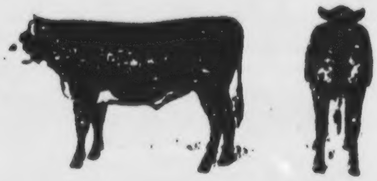
CHOICE ——



(NOTE: Slaughter cattle possessing minimum qualifications for the Choice grade are moderately thick muscled, tend to be moderately thick fleshed. They are moderately neat and smoothly laid in with only a slight tendency toward prominence in older cattle. The twist is moderately full and the rounds are moderately thick and plump. There is a fullness or bulge distinctly evident over the crops, loin, and rump. Cattle 30 to 42 months of age have a moderately thick fat covering over the crops, back, loin, rump, and ribs. The brisket, flanks, and cod or udder show a marked fullness. Cattle under 30 months of age carry a slightly thick fat covering over the top. The brisket, flanks, and cod or udder appear moderatley full and the muscling is moderately firm.)

c. Good

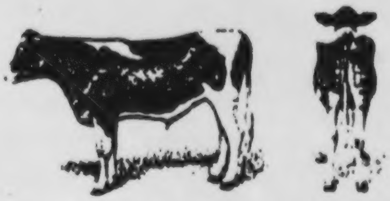
GOOD ——



(NOTE: Cattle possessing minimum qualifications for the Good grade are slightly thick muscled and tend to be slightly thick fleshed. They are slightly wide over the back and loin. The shoulders and hips are usually moderately neat and smoothly laid in but may appear slightly deep but tend to be flat with little evidence of plumpness. There is usually a very slight fullness evident over the crops, loin, and rump. Good grade cattle 30 to 48 months of age carry a slightly thin fat covering with some fullness evident in the brisket, flanks, twist, and cod or udder. Cattle under 30 months of age have a thin fat covering which is largely restricted to the back and loin. The brisket, flanks, twist, and cod or udder are slightly full and the muscling is slightly firm.)

d. Standard

STANDARD ——

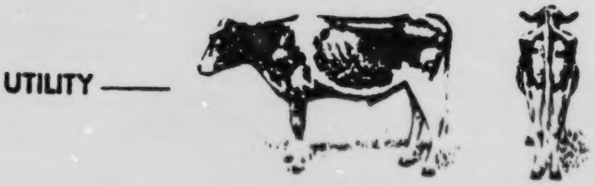


(NOTE: Slaughter cattle possessing minimum qualifications for the Standard grade tend to be thinly muscled, slightly rangy, and upstanding and tend to be thinly fleshed. They are narrow through the back loin, somewhat prominent at the hips, and shallow in the twist and rounds. The loin, rump, and rounds appear flat with no evidence of fullness. Cattle ranging from 30 to 48 months of age have a thin fat covering primarily over the back, loin, and ribs. Cattle under 30 months of age have only a very thin covering of fat which is larely restricted to the back, loin, and upper rib.)

e. Commercial

(NOTE: The commercial grade is limited to cattle over approximately 48 months of age. Slaughter cattle possessing the minimum qualifications for Commercial tend to be thinly muscled, slightly rangy, and thinly fleshed. They appear deep through the forerib and moderately wide through the back and loin. The hips and shoulders are prominent and the rounds are thin and shallow with no apparent bulge or fullness. Slaughter cattle which slightly exceed the minimum maturity for the Commercial grade have a slightly thick fat covering over the back, ribs, loin, and rump. Very mature cattle usually have at least a moderately thick fat covering over the back, ribs, loin, and rump and considerable patchiness frequently is evident about the tailhead. The brisket, flanks, and cod or udder appear to be moderately full and the muscling is firm.

f. Utility



(NOTE: Cattle possessing the minimum qualifications for the Utility grade are thinly muscled and tend to be rangy, upstanding, and angular. They are narrow through the crops and the loin, rump, and rounds appear slightly sunken. Shoulders and hips are decidedly prominent and the depth through the forerib is much greater than through the rear flank. The degree of finish required for the utility grade varies throughout the range of maturity permitted in this grade from a very thin covering of fat for cattle under 30 months of age to a slightly thick fat covering, generally restricted to the back, loin, and rump for the very mature cattle, the crops are slightly thin and the brisket, flanks, and cod or udder indicate very slight fullness.)

g. Cutter

(NOTE: Slaughter cattle possessing the minimum qualifications for the Cutter grade are very thinly muscled and tend to be decidedly rangy, upstanding, and angular. The hips and shoulders are very prominent and the loins and rounds are very sunken. The degree of finish ranges from practically none in cattle under 30 months of age to very mature cattle which have only a very thin covering of fat.)

h. Canner

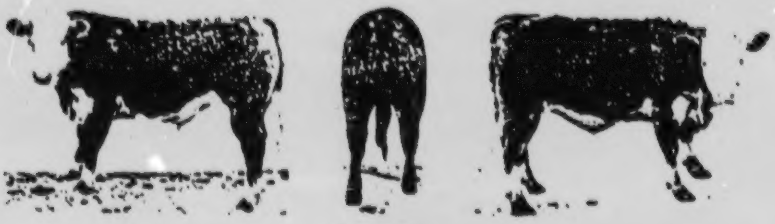
(NOTE: Canner grade cattle are those which are inferior to the minimum specified for the Cutter grade.)

2. Cows
   - a. Choice
   - b. Good
   - c. Standard
   - d. Commercial
   - e. Utility
   - f. Cutter
   - g. Canner

3. Bulls and stags
   - a. Choice
   - b. Good
   - c. Commercial
   - d. Utility
   - e. Cutter
   - f. Canner

B. Feeder

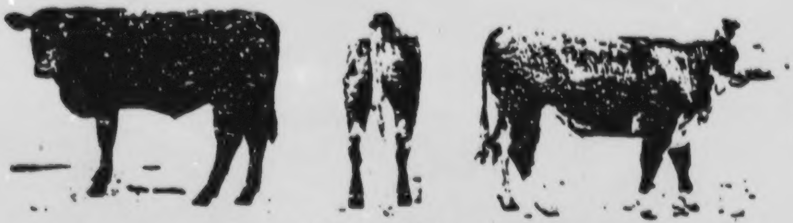
1. Prime



PRIME

(NOTE: Prime cattle which possess typical minimum qualifications for the Prime grade are extremely thrifty and are very large for their ages, breed considered. They are very thickly muscled throughout. They are wide through the chest with well-sprung ribs and are moderately wide and thick through the crops, back, and loin. The rounds tend to be thick and the twist is moderately deep. They usually have straight top and bottom lines and usually are moderately deep in the fore and rear flanks. The legs tend to be short, are set wide apart, and usually are straight. The head is usually short and wide and the neck usually is short and thick. They have large, rugged frames with moderately large but refined bone. They have a high degree of symmetry and smoothness throughout and usually show no evidence of non-beef breeding. They have a logical slaughter potential of Prime. Only steers and heifers are eligible for the Prime grade.)

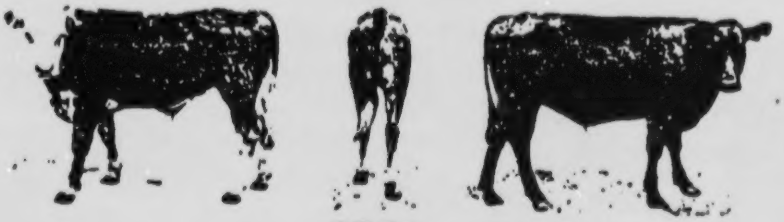
2. Choice



CHOICE

(NOTE: Feeder cattle which possess typical minimum qualifications for the Choice grade are very thrifty and are large for their age, breed considered. They are thickly muscled throughout. They are moderately wide through the chest with a moderate spring of ribs and are slightly wide and thick through the crops, back, and loin. The rounds are slightly thick and the twist is slightly deep. They usually have straight top lines and usually are moderately deep in the fore and rear flanks. The legs are slightly short, and are set moderately wide apart and usually are straight. The head usually is moderately short and wide and the neck usually is slightly short and thick. They have moderately large, rugged frames, and the bone usually is moderately large, but may be slightly fine or slightly large and coarse. They have a moderate degree of symmetry and smoothness throughout and usually show a very high proportion of beef breeding. They have a logical slaughter potential of Choice.)

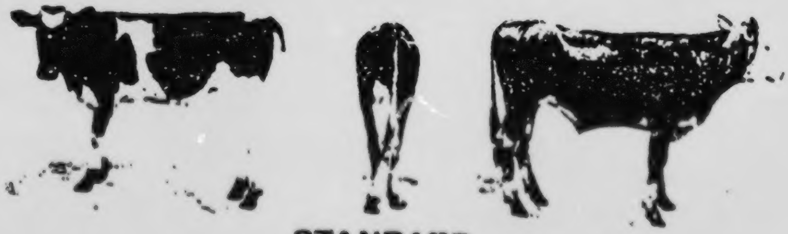
3. Good



GOOD

(NOTE: Feeder cattle which possess typical minimum qualifications for the Good grade are thrifty but may be slightly small for their age, breed considered. They are slightly thick muscled throughout. They are slightly narrow through the chest and may be slightly deficient in spring of rib. They are slightly narrow through the crops, back and loin. The muscles of the rump are slightly sunken and the hips and shoulder joints are slightly prominent. The rounds are slightly thin, and the twist is slightly shallow. They usually have moderately straight top lines but may lack depth in the rear flank. The legs tend to be slightly long, are set slightly wide apart and frequently are crooked. The head is usually slightly short and wide and the neck usually is slightly long and thin. They have a slightly large frame and the bone usually is slightly fine although it may also be slightly large and coarse. They are slightly irregular and rough in appearance and usually are predominantly of beef breeding. They have a logical slaughter potential of Good.)

4. Standard



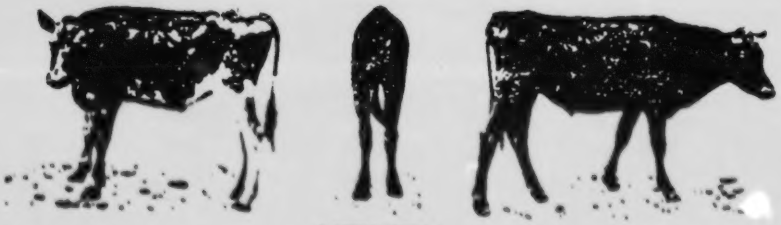
STANDARD

(NOTE: Feeder cattle which possess typical minimum qualifications for the Standard grade are only moderately thrifty and are moderately small for their age, breed considered. They are slightly thin muscled and are angular, rough, and irregular in appearance throughout. They tend to be narrow through the chest and through the crops, and the muscles of the back, loin, and rump tend to be slightly sunken. Hips and shoulder joints are prominent. The rounds are thin and slightly concave and the twist is shallow. They usually have an uneven top line and may lack depth in the rear flank. The legs are long set close together, and are usually crooked. The head usually is long and narrow and the neck usually long and thin. They have a slightly small frame and the bone is usually moderately fine, although it also may be moderately large and coarse. They are usually predominantly of non-beef breeding and have a logical slaughter potential of Standard.)

5. Commercial

(NOTE: The Commercial grade for feeder cattle is restricted to cattle that will be too mature for the Good or Standard grade when they reach their logical slaughter potential. These will usually be cows. Cattle possessing typical minimum qualifications for the Commercial grade are moderately thrifty but are slightly thin muscled and are angular, rough, and irregular in appearance throughout. They tend to be narrow through the chest and crops, and the muscles of the back, loin, and rump tend to be slightly sunken. Hips and shoulder joints are prominent. The rounds are thin and slightly concave and the twist is shallow. They usually have an uneven top line and may lack depth in the rear flank. The legs are long and set close together. The head usually is long and narrow and the neck usually long and thin. Although cattle near the lower limits of the grade may be predominatly of non-beef breeding, the majority of feeder cattle in this grade are predominantly of beef breeding. They have a logical slaughter potential of Commercial.)

6. Utility



UTILITY

(NOTE: Feeder cattle which possess typical minimum qualifications for the Utility grade are slightly unthrifty and are small for their age, breed considered. They are thinly muscled throughout and are very angular, rough, and irregualr in appearance. They are very narrow through the chest and the crops and the muscles of the back, loin, and rump are sunken. Hips and shoulder joints are very prominent. The rounds are very thin and concave and the twist is very shallow. They usually have an irregular top line and are cut up in the rear flank. The legs are very long, are set very close together, and are usually crooked. The head usually is very long and narrow and the neck usually is decidedly long and thin. They have a very small frame and the bone usually is very fine, although it also may be large and coarse. They usually have little or no evidence of beef breeding and have a logical slaughter potential of Utility.)

7. Inferior

(NOTE: Feeder cattle inferior to those described for Utility are graded Inferior.)

VII. Factors determining market classes of sheep

A. Whether they are sheep or lambs

B. Use selection

C. Sex

D. Age

E. Weight

VIII. Sex classes of sheep

A. Ewe

B. Wether

C. Ram

IX. Age groups of sheep

A. Lambs

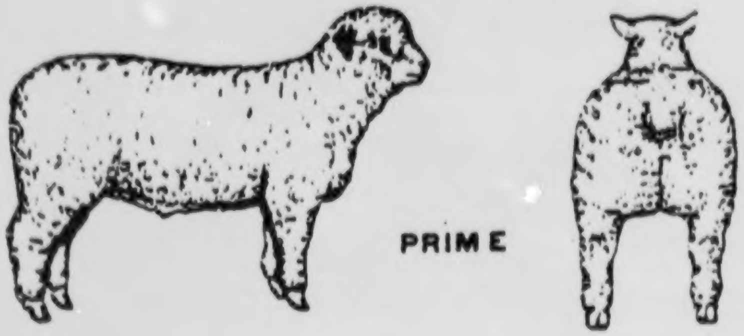
1. Hothouse - Lambs usually less than three months of age at slaughter which are born and marketed out of season
2. Spring - Lambs arriving at the market in the spring of the year and which range from three to seven months of age
3. Lambs - All young ovine animals that do not classify as either hothouse or spring lambs

B. Sheep

1. Yearling - Young sheep between approximately one and two years of age
2. Two-year-olds - Sheep that are between 24 and 36 months old and which have cut their second pair of permanent teeth.
3. Three-year-olds - Sheep that are between 36 to 48 months old and which have cut their third pair of permanent incisor teeth.
4. Four-year-olds - Sheep that are between 48 and 60 months old and which have a full set of permanent incisors
5. Mature sheep - Usually animals that are two years old or over
6. Broken-mouthed - Sheep showing loss of teeth
7. Gummers - All incisors missing or worn down to the gums
8. Spreaders - Teeth are long and spread apart on the surface

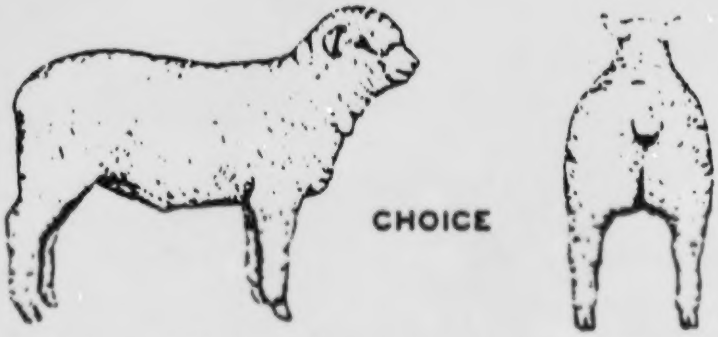
X. Market grades of slaughter lambs

A. Prime



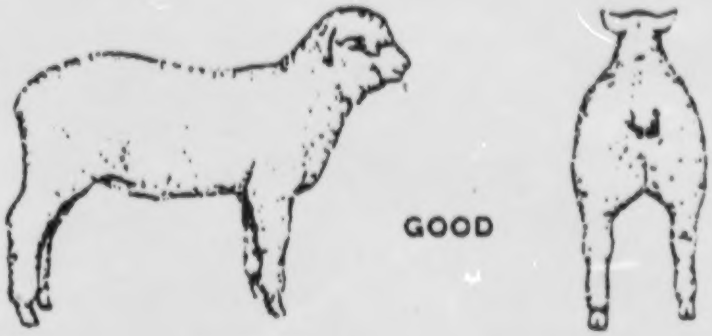
(NOTE: Lambs possessing the minimum requirements for the Prime grade are moderately lowest and blocky and thick-fleshed. They are moderately wide over the back, loin and rump. Shoulders and hips are usually moderately smooth. The twist is moderately deep and full and the lets are moderately large and plump. They generally present a well-rounded appearance due to a slight fullness or plumpness over the crops, loin, and rump. Prime lambs exhibit evidences of rather high quality. The bones tend to be proportionately small, the joints tend to be smooth, and the body tends to be trim, smooth, and symmetrical.)

B. Choice



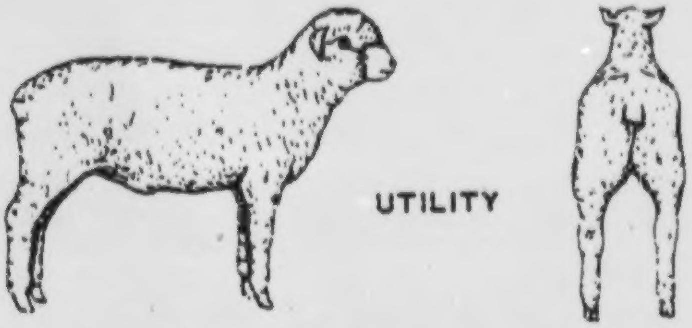
(NOTE: Lambs possessing the minimum requirements for the grade tend to be slightly lowset and blocky and thick-fleshed. They tend to be slightly wide over the back, loin, and rump. The shoulders and hips are usually slightly smooth but may exhibit a slight tendency toward prominence. The twist tends to be slightly smooth but may exhibit a slight tendency toward prominence. The twist tends to be slightly deep and full, and the legs tend to be slightly thick and plump. Choice lambs usually present a moderately refined appearance.)

C. Good



(NOTE: Lambs possessing the minimum requirements for the Good grade are moderately rangy and upstanding and thin-fleshed. They are slightly narrow over the back, loin, and rump. Hips and shoulders are moderately prominent. The twist is slightly shallow and the legs are slightly small and thin. Lambs of this grade may present evidence of slightly low quality. The bones and joints are usually moderately large, and the body is somewhat lacking in symmetry and smoothness.)

D. Utility



(NOTE: Lambs meeting the minimum requirements for the Utility grade are very rangy and angular. They are very thin-fleshed, very narrow over the back, loin, and rump, and very shallow in the twist. The hips are very prominent and the shoulders are usually open, rough, and prominent. The legs are very small and thin, and present a slightly concave appearance. Regardless of age, Utility lambs show no visible evidence of fat covering. Utility grade lambs are of rather low quality The bones and joints are proportionately large and the body is very rough and unsymmetrical.)

E. Cull

(NOTE: Typical Cull grade lambs are extremely rangy, angular, and thin-fleshed and extremely narrow and shallow bodied. Shoulders and hips are very prominent. The legs are extremely small and thin and present a very concave appearance. The general appearance is that of low quality. The relative proportion of meat to bone is quite low, joints appear large, and the body is very unsymmetrical.)

(NOTE: The present on-foot quality grades of slaughter lambs was established in 1960. The grade of slaughter lamb is determined generally by conformation and quality; however, maturity and other factors are considered. Conformation includes the general body proportions and the ratio of meat to the bone, which are influenced by muscling and the animal's skeletal system.)

XI. Factors determing market classes of swine

A. Hogs versus pigs

1. Animals under 120 pounds are generally known as pigs
2. Animals over 120 pounds are generally known as hogs

B. Use selection

C. Sex

D. Weight

XII. Sex classes of swine

A. Boar

B. Barrow

C. Gilt

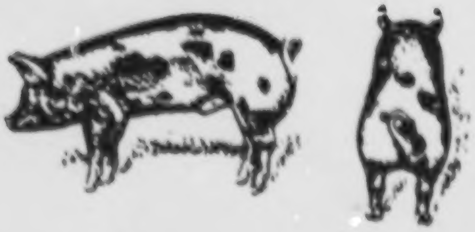
D. Sow

E. Stag

XIII. Slaughter and feeder grades of swine

A. Slaughter

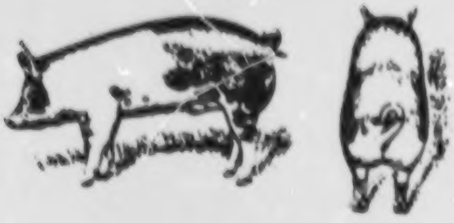
1. U.S. No. 1



U.S. NO.1

(NOTE: Barrows and gilts in this grade will produce carcasses with acceptable lean quality and acceptable belly thickness and a high percentage of lean cuts. Swine near the borderline between the U.S. No. 1 and U.S. No. 2 grades are thickly muscled in the hams, loins, and shoulders. The width through the ham is nearly equal to the width through the shoulders and both are wider than the back. The back is slightly full, is well rounded, and blends smoothly into the sides. The sides are moderately long and smooth. The rear flank is slightly full and its depth is less than the depth of the fore flank. The jowls are firm and slightly thick and full.)

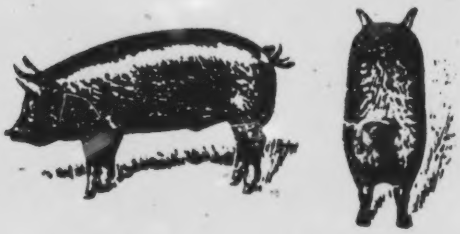
2. U.S. No. 2



U.S. NO.2

(NOTE: Slaughter barrows and gilts in this grade will produce carcasses with acceptable lean quality, acceptable belly thickness, and a slightly high percentage of lean cuts. Swine near the borderline between U.S. No. 2 and U.S. No. 3 grades are moderately thickly muscled in the hams, loins, and shoulders. The width through the shoulders is slightly more than the width through the hams. The back is moderately full and is slightly rounded but with a slight break into the sides. The sides are slightly short and smooth. The rear flank is moderately full and its depth is slightly less than the depth of the fore flank. The jowls are moderately thick and full.)

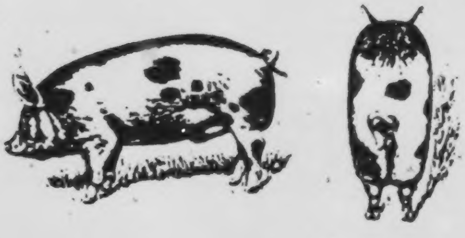
3. U.S. No. 3



U.S. NO.3

(NOTE: Slaughter barrows and gilts in this grade will produce carcasses with acceptable lean quality and acceptable belly thickness and a slightly low percentage of four lean cuts. Swine near the borderline between the U.S. No. 3 and U.S. No.4 grades are slightly thinly muscled in the hams, loins and shoulders. The width through the shoulders is definitely greater than the width through the hams. The back is full and nearly flat with a pronounced break into the sides. The sides are short and smooth. The rear flank is full and its depth is equal to the depth of the fore flank. The jowls are thick and full.)

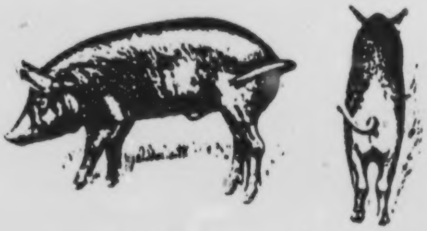
4. U.S. No. 4



U.S. NO.4

(NOTE: Barrows and gilts in this grade will produce carcasses with acceptable belly thickness. However, they are fatter and less muscular and will have a lower carcass yield of the four lean cuts than those in the U.S. No. 3 grade.)

5. U.S. Utility

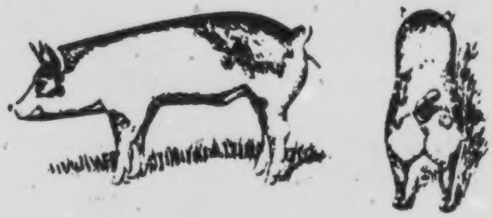


U.S. UTILITY

(NOTE: Barrows and gilts typical of this grade will have a thin covering of fat. The sides are wrinkled and the flanks are shallow and thin. Barrows and gilts in this grade will produce carcasses with unacceptable lean quality and/or unacceptable belly thickness.)

B. Feeder

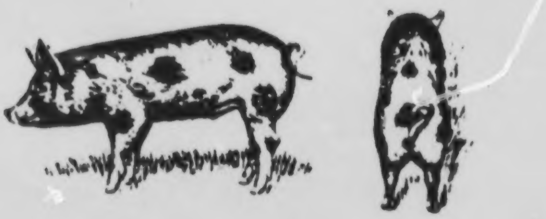
1. U.S. No. 1



U.S. NO.1

(NOTE: Feeder pigs in this grade near the borderline of the U.S. No. 2 grade are long and have thick muscling throughout. Thickness of muscling is particularly evident in thick and full hams and shoulders. The hams and shoulders are thicker than the back, which is well-rounded. They usually present a well-balanced appearance. In no case may a feeder pig be graded U.S. No. 1 with less than moderately thick muscling. Feeder pigs in this grade are expected to produce U.S. No. 1 grade carcasses when slaughtered at 220 pounds.)

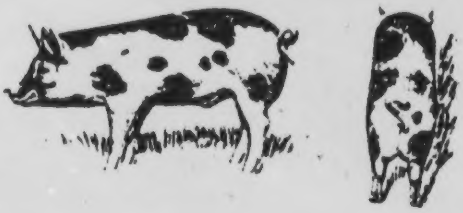
2. U.S. No. 2



U.S. NO.2

(NOTE: Feeder pigs in this grade near the borderline of the U.S. No. 3 grade are moderately long and have moderately thick muscling throughout. Thickness of muscling is particularly evident in moderately thick and full hams and shoulders. The back usually appears slightly full and well-rounded. They usually present a well-balanced appearance. This grade also includes feeder pigs which otherwise qualify for the U.S. No. 1 grade but have less than moderately thick muscling. Feeder pigs in this grade are expected to produce U.S. No. 2 grade carcasses when slaughtered at 220 pounds.)

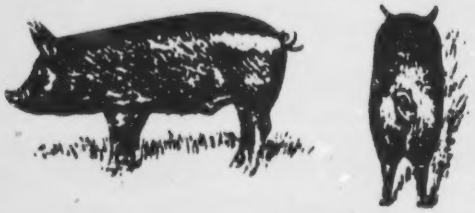
3. U.S. No. 3



U.S. NO.3

(NOTE: Feeder pigs in this grade near the borderline of the U.S. No. 4 grade are slightly short and have slightly thin muscling throughout. The hams and shoulders are slightly thin and flat and the back usually appears moderately full and thick. Feeder pigs in this grade are expected to produce U.S. No. 3 grade carcasses when slaughtered at 220 pounds.)

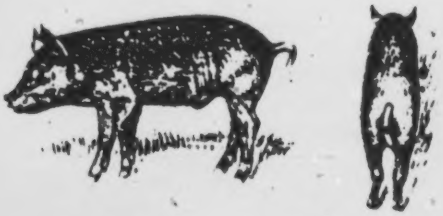
4. U.S. No. 4



U.S. NO.4

(NOTE: Feeder pigs typical of the U.S. No.4 grade are short and have thin muscling throughout. The hams are thin and rather flat, particularly in the lower parts toward the shanks. The back usually appears slightly flat and the width at the topline usually is greater than at the underline. Feeder pigs in this grade are expected to produce U.S. No. 4 grade carcasses when slaughtered at 220 pounds.)

5. U.S. Utility



U.S. UTILITY

(NOTE: Feeder pigs typical of this grade are small for their age and appear unthrifty. They often have a rough, unkempt appearance indicating the effects of disease or poor care. The hams and shoulders usually are thin and flat and taper toward the shanks. The back is thin and lacks fullness.)

MARKET GRADES AND CLASSES OF LIVESTOCK
UNIT V

ASSIGNMENT SHEET #1 - IDENTIFY THE CLASS WHILE PLACING SLAUGHTER AND FEEDER GRADES ON LIVE ANIMALS

Using the chart below, indicate in the square the class and grade that you believe most nearly fits the animal that you are evaluating. Check with instructor for his evaluation.

Commercial Cattle Grading Card

Name ______________________ Address ______________________ County ______________

	Classes									Slaughter Grades									Feeder Grades						
No.	Slaughter Calf	Slaughter Steer	Slaughter Heifer	Slaughter Cow	Feeder Steer Calf	Feeder Heifer Calf	Stocker Cow	Feeder Steer	Feeder Heifer	Prime	Choice	Good	Standard	Commercial	Utility	Cutter	Canner	Estimated Yield	Prime	Choice	Good	Standard	Utility	Inferior	Score
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									

MARKET GRADES AND CLASSES OF LIVESTOCK
UNIT V

TEST

1. Match the terms on the right to the correct definition.

_____a. An animal that is intended for intensive feeding in preparation for slaughter

_____b. Those cows recently freshened or soon due to calve, which are sold for milk purposes

_____c. Identifies the purpose for which an animal is to be used

_____d. The relative degree of excellence; grade is the final subdivision in a classification for marketing any kind of livestock

_____e. Calves which are of weaning age and are sold to go back into the country for further growing or finishing

_____f. An animal that is intended for immediate slaughter rather than for any other purpose

_____g. An animal that is intended for intensive feeding in preparation for slaughter

_____h. Calves that are between the ages of three months and one year, which have ususally received grain in addition to milk, and which are fat enough for slaughter

_____i. Young lambs under one year of age that are sufficiently fat for immediate slaughter

_____j. Young lambs under one year of age that carry sufficient finish for slaughter purposes but which show indications of making good gains if placed on feed

1. Grades of livestock
2. Feeder
3. Stocker
4. Slaughter lambs
5. Feeder lambs
6. Feeder calves
7. Slaughter calves
8. Milkers and springers
9. Slaughter animal
10. Classes of livestock

2. Name four factors that determine market classes of cattle.

   a.

   b.

   c.

   d.

3. Name five factors that should be considered in selecting feeder cattle.

   a.

   b.

   c.

   d.

   e.

4. Name the five sex classes of cattle.

   a.

   b.

   c.

   d.

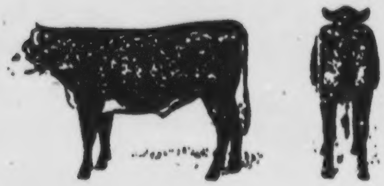
   e.

5. Match the terms on the right to the correct definition indicating the approximate age range of cattle.

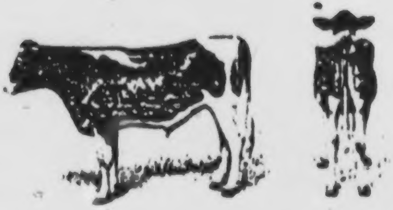
_____a. Cattle from 12 to 24 months of age
_____b. Cattle under three months of age
_____c. Cattle from 24 to 36 months of age
_____d. Cattle that are over 36 months of age
_____e. Cattle between the vealer and yearling stage

1. Older cattle
2. Two-year-olds
3. Vealers
4. Calves
5. Yearlings

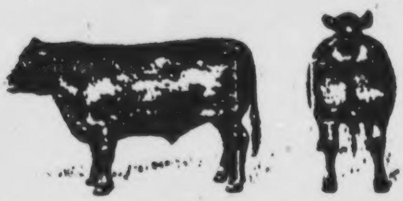
6. Identify the following slaughter grades of cattle.



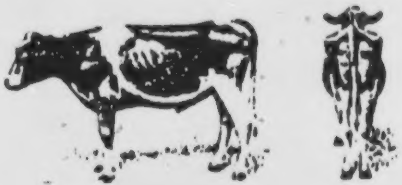
a.________________________________



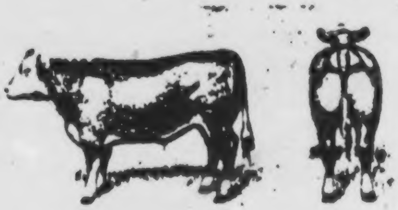
b.________________________________



c.________________________________

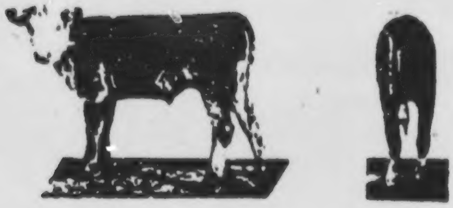


d.________________________________

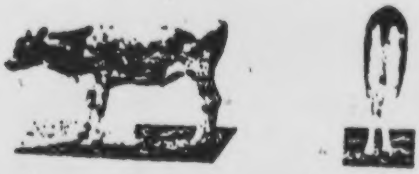


e.________________________________

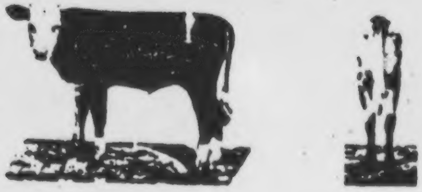
7. Identify the following feeder grades of cattle.



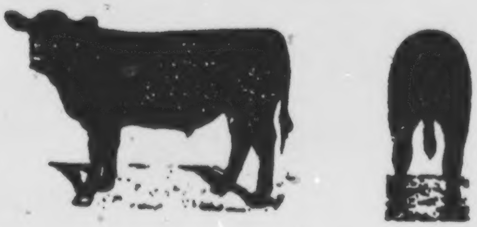
a.________________________________



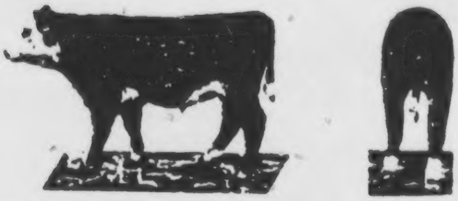
b.________________________________



c.________________________________



d.________________________________



e.________________________________

8. Name five factors that determine market classes of sheep.

   a.

   b.

   c.

   d.

   e.

9. Name the three sex classes of sheep.

   a.

   b.

   c.

10. Match the terms on the right to the correct definition indicating approximate age range of sheep.

_____a. Young sheep between approximately one and two years of age

_____b. Teeth are long and spread apart at the surface

_____c. Lambs usually less than three months of age at slaughter which are born and marketed out of season

_____d. Sheep that are between 24 and 36 months old and which have cut their second pair of permanent incisor teeth

_____e. All incisors missing or worn down to the gums

_____f. Lambs arriving at the market in the spring of the year and which range from three to seven months of age

_____g. Sheep showing loss of teeth

_____h. All young ovine animals that do not classify as either hothouse or spring lambs

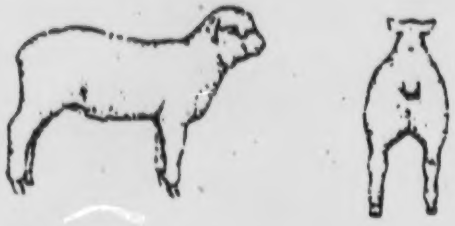
_____i. Usually animals that are two years old or over

1. Hothouse lambs
2. Spring lambs
3. Lamb
4. Yearlings
5. Two-year-olds
6. Three-year-olds
7. Four-year-olds
8. Mature sheep
9. Broken-mouthed
10. Gummers
11. Spreaders

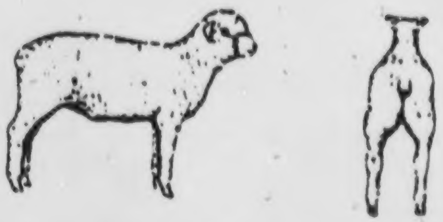
_____j. Sheep that are between 36 and 48 months old and which have cut their third pair of permanent incisor teeth

_____k. Sheep that are between 48 and 60 months old and which have a full set of permanent incisors

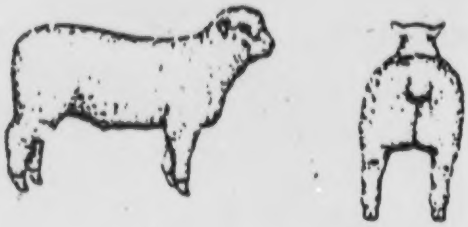
11. Identify the market grades of slaughter lambs.



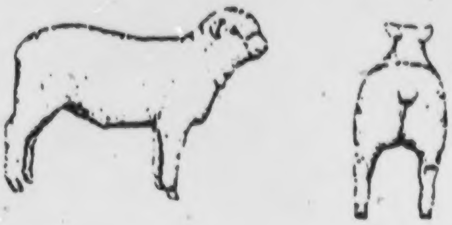
a.________________________________



b.________________________________



c.________________________________



d.________________________________

12. Name four factors that determine market classes of swine.

a.

b.

c.

d.

13. Name the five sex classes of swine.

a.

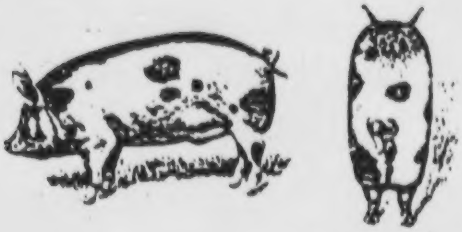
b.

c.

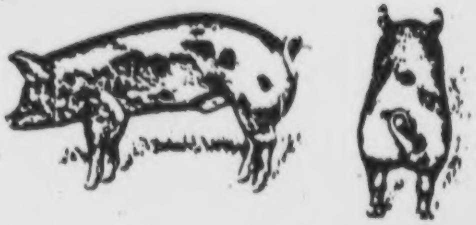
d.

e.

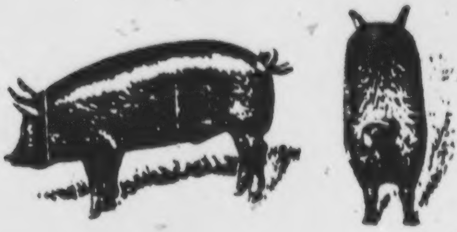
14. Identify the slaughter grades of swine.



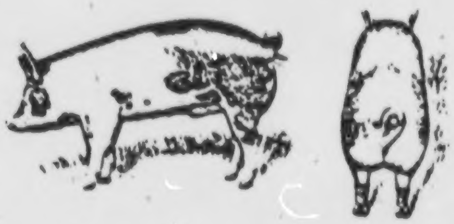
a.________________________



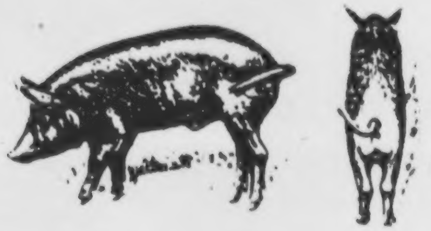
b.________________________



c.________________________

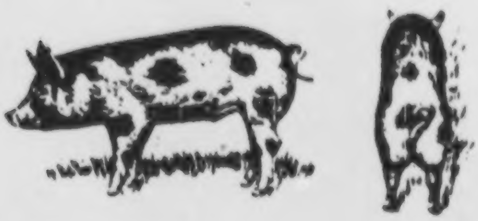


d.________________________

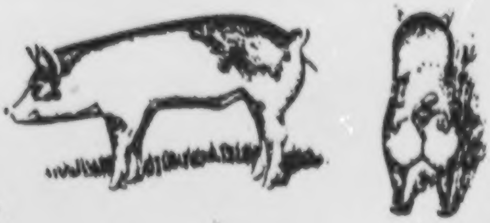


e.________________________

15. Identify the feeder grades of swine.



a.____________________



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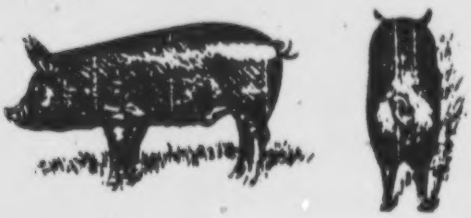

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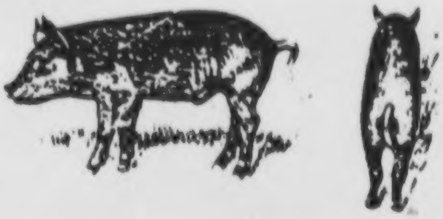

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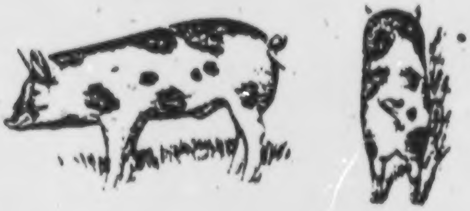


e.____________________

16. Demonstrate the ability to place feeder and slaughter grades on live animals.

MARKET GRADES AND CLASSES OF LIVESTOCK
UNIT V

ANSWERS TO TEST

1. 2 a.
   8 b.
   10 c.
   1 d.
   6 e.
   9 f.
   2 g.
   7 h.
   4 i.
   5 j.

2. a. Use selection
   b. Sex
   c. Age
   d. Weight

3. Any five of the following:
   a. Use selection
   b. Sex
   c. Age
   d. Thrift
   e. Natural fleshing
   f. Breeding
   g. Uniformity
   h. Absence of horns
   i. Temperament and disposition

4. a. Steer
   b. Heifer
   c. Cow
   d. Bull
   e. Stag

5. 5 a.
   3 b.
   2 c.
   1 d.
   4 e.

6. a. Good
   b. Standard
   c. Prime
   d. Utility
   e. Choice

7. a. Good
   b. Utility
   c. Standard
   d. Prime
   e. Choice

8. a. Whether they are sheep or lambs
   b. Use selection
   c. Sex
   d. Age
   e. Weight

9. a. Ewe
   b. Wether
   c. Ram

10. 4 a.
    11 b.
    1 c.
    5 d.
    10 e.
    2 f.
    9 g.
    3 h.
    8 i.
    6 j.
    7 k.

11. a. Good
    b. Utility
    c. Prime
    d. Choice

12. a. Hogs versus pigs
    b. Use selection
    c. Sex
    d. Weight

13. a. Boar
    b. Barrow
    c. Gilt
    d. Sow

14. a. U.S. No. 4
    b. U.S. No. 1
    c. U.S. No. 3
    d. U.S. No. 2
    e. U.S. Utility

15. a. U.S. No.2
    b. U.S. No.1
    c. U.S. No.4
    d. U.S. Utility
    e. U.S. No.3

16. Performance skills will be evaluated by the instructor.

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

TERMINAL OBJECTIVE

After completion of Unit VI, the student should be able to distinguish between a terminal market and a livestock auction and should be able to evaluate these markets and select the one that would most nearly fit his farming or ranching operation. He should be able to recognize the benefits of direct marketing and should be able to calculate shrinkage, grade, and yield and be able to apply these to the enterprise he is marketing. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of instruction, the student should be able to:

1. Match terms associated with marketing livestock to the correct definition.
2. Name four occupations that are available in the livestock marketing industry.
3. Select the state that leads all other states in the sale of cattle (excluding calves) and the state that leads in the sale of calves and feeder calves.
4. Distinguish between a terminal market and a livestock auction.
5. Discuss in a short paragraph the function of the advantages of direct marketing.
6. Indicate which market outlet receives the highest receipts of cattle, calves, hogs, and sheep.
7. Discuss in a short paragraph the purpose of the Packers and Stockyards Act.
8. Name three methods of selling cattle at a livestock auction.
9. Name six categories of charges that most livestock auctions use.
10. Name the three types of selling fees and select the one that is used most often by the livestock auction owners.
11. Name the three factors that determine dressing percentage of cattle.
12. Name four factors on which yield grades are based.
13. Name the two types of shrinkage and discuss each one.
14. Name five practices to do and five not to do to prevent shrinkage.
15. List four causes of cattle bruises in order of their occurence.
16. Calculate selling prices for livestock.
17. Calculate yield grade and value of cattle and hogs.

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.

   B. Provide students with information and assignment sheets.

   C. Discuss terminal and specific objectives with students.

   D. Discuss information and assignment sheets with students.

   E. Arrange field trip to observe market agencies in operation.

   F. Give test.

II. Students:

   A. Read objective sheet.

   B. Study information sheets.

   C. Work assignment sheets and turn in to instructor.

   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objective sheet

   B. Information sheets

   C. Assignment sheets

      1. Assignment Sheet #1 - Calculate Shrinkage and Selling Prices

      2. Assignment Sheet #2 - Calculate Selling Price Using Grade and Yield

   D. Answers to assignment sheets

   E. Test

   F. Answers to test

II. References:

   A. Fowler, Stewart H. Beef Production in the South, Danville, Illinois: The Interstate Printers and Publishers, Inc.

   B. Ensminger, M.E. Animal Science. Danville, Illinois: The Interstate Printers and Publishers, Inc.

C. Ensminger, M.E. Swine Science. Danville, Illinois: The Interstate Printers and Publishers, Inc.

D. Bundy, Clarence E. and Ronald V. Diggins. Swine Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

E. Bundy, Clarence E. and Ronald V. Diggins. Beef Production Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

F. Competitive Livestock Marketing. College Station, Texas: Agricultural Education Teaching Materials Center.

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

INFORMATION SHEET

I. Terms and definitions

A. Commission - A fee or a charge paid by the seller to an agent for selling services; or a fee charge paid by the purchaser to an agent for the buying of cattle

B. Auction - A market on which livestock are displayed in a ring and offered for sale to all buyers to the highest bidder

C. Commission company - A market agency that receives livestock on consignment to be sold on an agency basis for an established fee

D. Contract selling - The agreement between an owner and a buyer on the price of livestock setting forth the provisions relating to the description, delivery date, weighing point, and delivery point prior to the delivery of the livestock

E. Cooperative marketing - A method of selling livestock in which the service is performed by, or on behalf of, a voluntary association of livestock producers.

F. Direct marketing - The transfer of ownership of livestock from the seller to the purchaser without the service of an agency

G. Market agency - An agency engaged in the business of buying or selling livestock on a commission basis

H. Order buyer - A term applied to an individual who purchases livestock for others

I. Shrinkage - The loss in weight of the animals caused by the movement of livestock from one place to another

J. Packer market - A facility operated privately and solely by a packer or slaughterer where livestock is purchased directly from the producer for slaughter

K. Supply - The quantity of a product that is placed on the market at any give time

L. Terminal market - A trading center where facilities are provided for receiving, caring for, and handling livestock; where several selling agencies are in operation; and where the privileges of buying and selling are available to all who wish to use them

M. Livestock auction - A trading center where livestock is assembled at regular intervals and sold by public bidding

N. Trader or dealer - An individual, not a market agency, engaged in the business of buying or selling livestock for his own account, usually on a speculative basis

O. Dressing percentage - The percentage yield of chilled carcass in relation to the weight of the animal on foot

P. Carcass grade and yield selling - That type of transaction in which the packer makes a price bid based on the quality of the carcass as well as the carcass yield

II. Occupations available in the market industry

A. Order buyer

B. Packer buyer

C. Grader

D. Inspector

E. Weigh man

F. Sale barn operator or owner

G. Bill-in man

H. Barn or yard man

III. Terminal market receipts

A. Cattle (excluding calves)

		Number
1.	Omaha, Nebraska	1,132,358
2.	Chicago, Illinois	894,644
3.	St. Paul, Minnesota	849,209
4.	Sioux City, Iowa	841,605
5.	Oklahoma City, Oklahoma	694,401
6.	St. Joseph, Missouri	522,562
7.	Amarillo, Texas	488,430
8.	Kansas City, Missouri	461,727
9.	St. Louis N.S.Y., Illinois	405,674
10.	Sioux Falls, South Dakota	393,531

B. Calves

1.	Omaha, Nebraska	1,207,037
2.	Chicago, Illinois	1,038,304
3.	St. Paul, Minnesota	969,119
4.	Sioux City, Iowa	889,465
5.	Oklahoma City, Oklahoma	593,148
6.	St. Joseph, Missouri	548,925
7.	Kansas City, Missouri	539,726
8.	Amarillo, Texas	482,690
9.	St. Louis N.S.Y., Illinois	480,606
10.	Sioux Falls, South Dakota	438,399

C. Feeder cattle

1.	Oklahoma City, Oklahoma	236,760
2.	Kansas City, Missouri	172,056
3.	Sioux City, Iowa	97,674
4.	Omaha, Nebraska	74,674
5.	South St. Paul, Minnesota	70,452
6.	South St. Joseph, Missouri	50,990
7.	Sioux Falls, South Dakota	45,330
8.	St. Louis N.S.Y., Illinois	31,622

D. Hogs

1.	Sioux City, Iowa	1,909,417
2.	Omaha, Nebraska	1,823,498
3.	St. Louis N.S.Y., Illinois	1,569,467
4.	St. Paul, Minnesota	1,495,733
5.	St. Joseph, Missouri	1,304,743
6.	Peoria, Illinois	1,110,335
7.	Kansas City, Missouri	967,766
8.	Indianapolis, Indiana	933,833
9.	Sioux Falls, South Dakota	864,146
10.	Chicago, Illinois	295,689

E. Sheep and lambs

1.	San Angelo, Texas	662,828
2.	Sioux Falls, South Dakota	301,760
3.	West Fargo, North Dakota	164,037
4.	Sioux City, Iowa	148,231
5.	Omaha, Nebraska	133,360
6.	Wichita, Kansas	118,106
7.	St. Joseph,Missouri	106,803
8.	Billings, Montana	102,378
9.	Detroit, Michigan	78,171
10.	St. Louis N.S.Y., Illinois	62,539

(NOTE: Although figures may not be current, they are proportionately correct.)

IV. Markets

   A. Terminal

      1. Livestock assigned to a commission firm
      2. Stockyard company furnishes pens, scales, feed and water
      3. Stockyard company charges a fee for these services (usually 90 cents to $2.00 per head)
      4. Usually sell five days a week

   B. Livestock auction

      1. Weekly auctions
      2. Usually locally owned and operated
      3. All classes of livestock sold

         (NOTE: Bulk of livestock is feeder cattle and cull cows.)

      4. Selling service paid for by commission based on percentage of selling price or by the head

V. Direct marketing

   A. Sale of livestock direct to packers and feeders without services of commission men or selling agents

   B. Sale prior to delivery on specified price and shrinkage

VI. Packer purchases of livestock by type of market outlet, 1966-1976

YEAR AND MARKET OUTLET (Number of Packers)	CATTLE		CALVES		HOGS		SHEEP	
	1,000 Head	Percent	1,000 Head	Percent	1,000 Head	Percent	1,000 Head	Percent
1966 - All Packers (1,337)								
Direct, Country Dealers, etc.	14,966	49.2	2,095	33.7	43,255	62.7	8,274	64.6
Terminal Markets	9,434	31.0	976	15.7	15,246	22.1	2,803	21.9
Auction Markets	6,028	19.8	3,153	50.6	10,458	15.2	1,722	13.5
TOTAL	30,456	100.0	6,224	100.0	68,959	100.0	12,799	100.0
1967 - All Packers (1,274)								
Direct, Country Dealers, etc.	16,176	53.1	1,844	33.4	50,948	65.7	8,377	64.8
Terminal Markets	8,746	28.7	796	14.4	14,540	18.8	2,457	19.0
Auction Markets	5,559	18.2	2,880	52.2	12,019	15.5	2,099	16.2
TOTAL	30,481	100.0	5,520	100.0	77,507	100.0	12,933	100.0
1968 - All Packers (1,300)								
Direct, Country Dealers, etc.	17,906	57.0	1,707	33.8	53,178	66.6	7,451	66.4
Terminal Markets	7,738	24.7	706	14.0	15,421	19.3	2,084	18.6
Auction Markets	5,755	18.3	2,631	52.2	11,284	14.1	1,682	15.0
TOTAL	31,399	100.0	5,044	100.0	79,883	100.0	11,217	100.0
1969 - All Packers (1,205)								
Direct, Country Dealers, etc.	19,976	61.8	1,647	35.2	54,906	67.4	7,369	70.8
Terminal Markets	6,852	21.2	606	12.9	15,380	18.9	1,669	16.1
Auction Markets	5,492	17.0	2,427	51.9	11,155	13.7	1,363	13.1
TOTAL	32,320	100.0	4,680	100.0	81,441	100.0	10,401	100.0
1970 - All Packers (1,148)								
Direct, Country Dealers, etc.	21,014	65.3	1,332	34.0	55,398	68.5	6,986	72.5
Terminal Markets	5,919	18.4	449	11.4	13,863	17.1	1,453	15.1
Auction Markets	5,265	16.3	2,139	54.6	11,586	14.3	1,192	12.4
TOTAL	32,198	100.0	3,920	100.0	80,846	100.0	9,631	100.0
1971 - All Packers (994)								
Direct, Country Dealers, etc.	22,134	68.6	1,099	32.4	62,956	69.3	7,245	74.0
Terminal Markets	5,126	15.9	291	8.6	15,326	16.9	1,339	13.6
Auction Markets	4,992	15.5	1,998	59.0	12,543	13.8	1,213	12.4
TOTAL	32,252	100.0	3,388	100.0	90,825	100.0	9,797	100.0
1972 - All Packers (968)								
Direct, Country Dealers, etc.	23,150	72.2	875	31.6	58,686	70.4	7,285	74.3
Terminal Markets	4,216	13.2	214	7.7	13,533	16.3	1,343	13.7
Auction Markets	4,681	14.6	1,680	60.7	11,085	13.3	1,171	12.0
TOTAL	32,047	100.0	2,769	100.0	83,304	100.0	9,799	100.0
1973 - All Packers (969)								
Direct, Country Dealers, etc.	22,508	73.0	680	30.9	53,462	70.3	6,530	73.0
Terminal Markets	3,667	11.9	181	8.2	13,186	17.3	1,103	12.3
Auction Markets	4,653	15.1	1,341	60.9	9,432	12.4	1,319	14.7
TOTAL	30,828	100.0	2,202	100.0	76,080	100.0	8,952	100.0
1974 - All Packers (938)								
Direct, Country Dealers, etc.	22,527	69.6	845	30.4	54,653	70.0	6,599	75.1
Terminal Markets	4,509	13.9	181	6.5	13,707	17.6	1,007	11.5
Auction Markets	5,309	16.4	1,755	63.1	9,681	12.4	1,184	13.5
TOTAL	32,346	100.0	2,782	100.0	78,040	100.0	8,790	100.0
1975 - All Packers (912)								
Direct, Country Dealers etc.	23,671	65.9	1,447	32.4	48,726	71.6	5,742	74.4
Terminal Markets	5,155	14.4	369	8.3	11,090	16.3	773	10.0
Auction Markets	7,068	19.7	2,651	59.3	8,260	12.1	1,204	15.6
TOTAL	35,894	100.0	4,467	100.0	68,076	100.0	7,719	100.0
1976 - All Packers (923)								
Direct, Country Dealers, etc.	24,713	66.3	1,460	30.0	49,032	71.5	4,925	75.2
Terminal Markets	4,791	12.9	377	7.7	11,710	17.1	642	9.8
Auction Markets	7,749	20.8	3,037	62.3	7,879	11.5	980	15.0
TOTAL	37,253	100.0	4,874	100.0	68,621	100.0	6,548	100.0

(NOTE: Summarized from annual reports of packers filed with the Packers and Stockyards Administration, USDA. Includes data for all firms purchasing more than 1,000 head of cattle or 2,000 head of all livestock during the reporting period.)

VII. Packers and Stockyards Act - A Federal statute regulating business practices of those engaged in interstate commerce in livestock and live poultry marketing and meat and poultry packing

- A. Passed by Congress in 1921
- B. Last amended in 1968
- C. Establishes true market value of livestock and poultry
- D. Protects consumers against unfair business practices
- E. Administered by USDA; covers
  - 1. Registering and bonding
  - 2. Facilities and rates
  - 3. Scales and weighing

VIII. Methods of selling (Livestock Auction)

- A. By the head - Single owner
- B. By weight - Single owner
- C. By grade - May be more than one owner

  (NOTE: Animals are graded, weighed, and sorted into lots of uniform quality and weight and are sold together even if they belong to different owners.)

IX. Livestock auction charges

- A. Commission for selling
- B. Yardage
- C. Feed
- D. Health and brand inspection
- E. Insurance
- F. Vaccination
- G. Brucellosis (Bang's) testing

X. Types of selling fees (Livestock Auctions)

- A. Percentage of gross sales
- B. Per head basis - Used most often
  - 1. Cattle charge range from $1.50-2.00
  - 2. Calves range from $1.00-1.50
- C. Combination of both

XI. Factors determining dressing percentage
  - A. Quality of flesh-both lean and fat
  - B. Amount of fill; also stage of pregnancy
  - C. Refinement of head, bone, and hide

XII. Factors on which yield grades are based
  - A. Amount of external fat
  - B. Size of rib eye muscle
  - C. Amount of kidney, pelvic, and heart fat
  - D. Carcass weight

XIII. Types of shrinkage
  - A. Excretory - Results from the elimination of feces and urine
  - B. Tissue - The actual decrease in the carcass weight of cattle
  - C. Calculation example
    1. 3% shrinkage x 480 lbs. of live weight = 14.40
    2. 480 lbs. - 14 lbs. = 466 lbs.

XIV. Do's and don'ts of shrinkage
  - A. Do
    1. Condition cattle several days prior to shipment
    2. Plan the shipping program
    3. Sort heifers and steers if possible
    4. Keep cattle off feed and water before shipping
    5. Allow time for fill back if cattle have been in transit more than 12 hours
  - B. Don't
    1. Overfill cattle before hauling
    2. Overcrowd or underload shipment
    3. Delay shipment after cattle are ready for movement
    4. Overfill cattle at destination
    5. Rush or crowd cattle while loading

C. Analysis sheet

(NOTE: Grade and yield at this particular marketing plant are based on the market price of U.S. No. 3 hogs. For each grade above this, the producer is rewarded. An additional reward is given on percent yield above the previous day's plant yield.)

1. The producer is given a 30 percent increase per hundred of live weight for each percent yield above the plant standard hot carcass yield from the previous day.
2. It is estimated that a 5 to 7 percent return can be received on gross sales according to yield and grade compared to live market selling price.

Ag. III - 115-B

ANALYSIS SHEET

RODEO MEATS INC.
RK CITY PLANT
HOG LOT ANALYSIS

PURCHASE DATE	TYPE OF HOG	LOT NO.	SHIPPER	MARKET BASIS
03-19	BUTCHERS	710	S ORIER	GRADE/YIELD

NO. HEAD	TOTAL LIVE COST	TOTAL LIVE WGT.	AVG. LIVE COST	AVG. WGT.
18		4,005		223

WT. RANGE FROM	TO	GR. CODE	NO. HEAD	HOT CARC. WEIGHT	HOT # 1 STD. YLD.	CALC. LIVE WEIGHT	% BY WT. RGE.	# 1 SCHD PRICE	# 1 SCHEDULE VALUE	LIVE GRADE FACTOR	GRADE MARGIN	LOT VALUE
201	210	1	1	153			5.6	65.64	100.43	2.00	3.06	103.49
211	220	1	2	317				65.98	209.16	2.00	6.34	215.50
211	220	2	1	157				65.98	103.59	1.00	1.57	105.16
211	220	3	1	161			22.2	65.98	106.23			106.23
221	230	1	3	489				65.98	322.64	2.00	9.78	332.42
221	230	2	3	496			33.3	65.98	327.26	1.00	4.94	332.22
231	240	1	1	170				65.98	112.17	2.00	3.40	115.57
231	240	2	1	170			11.1	65.98	112.17	1.00	1.70	113.87
241	250	1	3	532				64.86	345.06	2.00	10.64	355.70
241	250	2	1	180			22.2	64.86	116.75	1.00	1.80	118.55
251	260	3	1	186			5.6	64.18	119.37			119.37
LOT TOTALS			18	3,011		4,087			1,974.83		43.25	2,018.08

LOT GRADING RECAP

GR.	TYPE CARCASS	NO. HEAD	% BY GRADE
1	SUPERIOR MEAT TYPE	10	55.6
2	DESIRABLE MEAT TYPE	6	33.3
7	# 2 - POOR CONFORMATION		
3	BASIC CARCASS	2	11.1
4	OVER FINISHED		
5	EXTREMELY OVER FINISHED		
6	CULL		
8	MUTILATED		

LOT NO.	SHIPPER	RESALE	DEAD	COND.
710	S ORIER			

TRANSIT SHRK.	HOT CARCASS YIELDS	ACTUAL	STD.
%		75.18%	73.6%

BUY SUMMARY

$ AMOUNT		$ PER CWT.
1,935.21	BASE VALUE	48.32
39.62	YIELD MARGIN	.99
43.25	GRADE MARGIN	1.08
	COST MARGIN	
	SORT MARGIN	
	G/Y PREMIUM	2.07
2,018.08	G/Y PAYMENT	50.39

XV. Causes of cattle bruises

A.	Crowding, bumping, and rushing	66%
B.	Trampling	14%
C.	Cane-whip-club	10%
D.	Horned cattle	3%
E.	Other causes	7%

XVI. Calculating selling prices

A. Price per hundred weight x weight of live animal

B. Dollar value per head regardless of weight of live animal

C. Example

1. 5 Angus steers average weight 525 lbs., sold for $38.50 per hundred weight

   525 lbs. x 38.50 = $202.12 per head
   $202.12 x 5 head = $1,010.60

2. 5 Hereford steers sold direct, given a 3% shrink, and weighed an average 525 lbs. live weight; sold on a $38.50 market

   525 lbs. 3% shrinkage = 510 lbs.
   38.50 per hundred weight x 510 lbs. = $196.35 per head
   $196.35 x 5 head = $981.75

XVII. Calculating yield grade and value of cattle and hogs

A. Cattle

1. Live weight is not a factor
2. Carcass weight and the grade the carcass yields
3. Example

A 1,000 lb. steer hangs up a 560 lb. carcass, given a yield value of 50 cents
560 lb. x 50 cents = $280.00

4. Higher or lower grades adjusted up or down

B. Hogs

1. Amount of carcass produced for live weight purchased
2. Example

   Carcass weight ÷ live weight
   142 lbs. carcass ÷ 200 lbs. live weight = 71 percent yield

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

ASSIGNMENT SHEET #1 - Calculate Shrinkage and Selling Prices

Work each problem listed below, and when you have finished, turn in to your instructor for his evaluation.

1. Suppose you sold 20 head of Angus steers direct to a feeder to be delivered at the local livestock auction for weighing. You agreed on $37.50 hundred weight price and gave 3% shrinkage. Upon weighing your calves, they averaged 575 lbs. What would be the total dollars received for your steers?

2. You sold 7 Hereford steers to the local livestock auction. The steers averaged 375 lbs. and brought $41.00 per hundred weight. How much money did you receive for the steers?

3. You sold 5 Hereford heifers for $36.60 per hundred weight, and they averaged 560 lbs. What was the amount of money you received?

4. Suppose you had the option to sell 150 head of steers either at the local livestock auction or at a terminal market which is 100 miles from your farm. According to the information at the terminal market, steers similar to yours are bringing $38.75 per hundred weight. You estimated that the steers would weigh 575 lbs. on the average. Last week's local livestock auction was 75 cents lower than the terminal market. Using an estimated shrinkage of 4% on hauling to the terminal market and selling for $38.75 per hundred weight, would it be more profitable to sell at the livestock auction or at the terminal market? Why?

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

ASSIGNMENT SHEET #2 - Calculate Selling Price Using Grade and Yield

Work each problem listed below, and when you have finished, turn in to your instructor for his evaluation.

1. You sold 5 market hogs which graded U.S. No. 1. The hogs averaged 215 lbs. live weight, and the carcasses averaged 148 lbs. What was the percent yield?

2. You sold two Angus steers using a yield grade of 45 cents per pound. The steers average live weight was 950 lbs., and the average carcass weight was 500 lbs. What was the value of the steers?

3. You sold 20 Hereford steers which averaged 750 lbs. live weight and hung up a 400 lb. carcass. Using a yield grade factor of 50 cents per pound, what would be the value of the steers?

   Using a price of $30.50 per hundred weight, what would the steers' value be?

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

ANSWERS TO ASSIGNMENT SHEETS

A. Assignment Sheet #1

1. $4,185.00
2. $1,076.25
3. $1,024.80
4. Local livestock auction

   Because you would be losing 23 lbs. per steer on shrinkage, plus what the trucking would cost

   Terminal market 575 - 23 = 552 x $38.75 = $213.90 per steer or $32,085.00

   Local livestock auction 575 x $38.75 = $218.50 per steer or $32,775.00 for the 150 head

B. Assignment Sheet #2

1. 68%
2. $450.00
3. $5,000.00 yield grade

   $4,575.00 live weight sale

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

TEST

1. Match the terms on the right to the correct definition.

_____a. The loss in weight of the animals caused by the movement of livestock from one place to another

_____b. A trading center where facilities are provided for receiving, caring for, and handling livestock; where several selling agencies are in operation; and where the privileges of buying and selling are available to all who wish to use them

_____c. A market on which livestock is displayed in a ring and offered for sale to all buyers to the highest bidder

_____d. The transfer of ownership of livestock from the seller to the purchaser without the service of an agency

_____d. An agency engaged in the business of buying or selling livestock on a commission basis

_____f. A trading center where livestock is assembled at regular intervals and sold by public bidding

_____g. That type of transaction in which the packer makes a price bid based on the quality of the carcass as well as the carcass yield

_____h. A market agency that receives livestock on consignment to be sold on an agency basis for an established fee

1. Livestock auction
2. Carcass grade and yield
3. Auction
4. Commission
5. Market agency
6. Shrinkage
7. Terminal market
8. Order buyer
9. Commission company
10. Direct marketing

_____i. A term applied to an individual who purchases livestock for others

_____j. A fee or a charge paid by the seller to an agent for selling services; or a fee charge paid by the purchaser to an agent for the buying of livestock.

2. Name four occupations that are available in the livestock marketing industry.
   a.
   b.
   c.
   d.

3. Write a short paragraph discussing the trends of receipts on hogs, sheep and lambs, cattle and calves at terminal markets.

4. Distinguish between a terminal market and a livestock auction. Place "TM" in the blank if the statement describes the operation of a terminal market and "LA" in the blank if the statement describes the operation of a livestock auction.

_____a. A livestock market which is usually locally owned and operated, having weekly sales, where livestock is sold to the highest bidder.

_____b. A livestock market where cattle are assigned to a commission firm and where the stockyards provide the pens, feed, and water for a commission charge

5. Discuss in a short paragraph the function and the advantages of direct marketing.

6. Write a short paragraph discussing the trend of market purchases by packers of cattle, calves, hogs, and sheep.

7. Discuss in a short paragraph the purpose of the Packers and Stockyards Act.

8. Name three methods of selling cattle at a livestock auction.
   a.
   b.
   c.

9. Name six categories of charges that most livestock auctions use.
   a.
   b.
   c.
   d.
   e.
   f.

10. Name the three types of selling fees and select the one that is used most often by the livestock auction owners.
    a.
    b.
    c.

11. Name the three factors that determine dressing percentage of cattle.
    a.
    b.
    c.

12. Name four factors on which yield grades are based.
    a.
    b.
    c.
    d.

13. Name the two types of shrinkage and discuss each one.

    a.

    b.

14. Name five do's and don'ts for keeping shrinkage to a minimum.
    a. Do
        1.
        2.
        3.
        4.
        5.

    b. Don't
        1.
        2.
        3.
        4.
        5.

15. Which of the following contributes to the number one cause of livestock bruises? Circle your answer.

    a. Horned cattle

    b. Trampling

    c. Other causes

    d. Crowding, bumping, and rushing

    e. Cane-whip-club

16. You sold 6 head of steers which averaged 465 lbs. live weight. They brought $37.50 per hundred weight, and you gave a 3% shrinkage. How much money did you receive for your steers?

17. Work the following problems and be sure to show your calculations.

    a. Your sold 3 market barrows according to yield and grade. The barrows averaged 225 lbs. live weight, and the carcass averaged 168 lbs. What is the percent yield?

    b. You sold a 980 lb. Hereford steer which hung up a 565 lb. carcass. Let's suppose the carcass graded good and received a grade price of 45 cents. What was the value of the steer?

18. Select one of the marketing agencies below that you would use in marketing your livestock and discuss in a short paragraph the reason for your selection.

    a. Terminal markets

    b. Livestock auction

    c. Selling by yield and grade

    d. Direct marketing

MARKETING LIVESTOCK AND MARKET AGENCIES
UNIT VI

ANSWERS TO TEST

1. 6 a.
   7 b.
   3 c.
   10 d.
   5 e.
   1 f.
   2 g.
   9 h.
   8 i.
   4 j.

2. Any four of the following
   a. Order buyer
   b. Packer buyer
   c. Grader
   d. Inspector
   e. Weigh man
   f. Sale barn operator or owner
   g. Bill-in man
   h. Barn or yard man

3. Answer to the teacher's satisfaction.

4. LA a.
   TM b.

5. Discussion should contain such things as no commission to be paid to selling agents; and seller and purchaser can agree on price per hundred weight.

6. Answer to the teacher's satisfaction.

7. Discussion should contain such things as when the act was passed by Congress (1921) and last amended (1968). It regulates business practices of those engaged in interstate commerce in livestock and poultry marketing. The act is administered by the USDA and covers registering and bonding, facilities and rates, and scales and weighing.

8. a. By the head
   b. By weight
   c. By grade

9. Any six of the following:
   a. Commission for selling
   b. Yardage
   c. Feed
   d. Health and brand inspection
   e. Insurance
   f. Vaccination
   g. Brucellosis (Bang's) testing

10. a. Percentage of gross sales
    b. Per head basis - This rate is the one used most often
    c. Combination of both

11. a. Quality of flesh
    b. Amount of fill; also stage of pregnancy
    c. Refinement of head, bone, and hide

12. a. Amount of external fat
    b. Size of rib eye muscle
    c. Amount of kidney, pelvic, and heart fat
    d. Carcass weight

13. a. Excretory - Results from the elimination of feces and urine
    b. Tissue - The actual decrease in the carcass weight of cattle

14. Do
    a. Condition cattle several days prior to shipment
    b. Plan the shipping program
    c. Sort heifers and steers if possible
    d. Keep cattle off feed and water before shipping
    e. Allow time for fill back if cattle have been in transit more than 12 hours

    Don't
    a. Overfill cattle before hauling
    b. Overcrowd or underload shipment
    c. Delay shipment after cattle are ready for movement
    d. Overfill cattle at destination
    e. Rush or crowd cattle while loading

15. d. Crowding, bumping, and rushing

16. $1,014.72

17. a. 74%
    b. $254.25

18. To be evaluated by the instructor.

REPRODUCTIVE ORGANS OF FARM MAMMALS
UNIT I

TERMINAL OBJECTIVE

After completion of Unit I, the student should be able to divide reproductive organs of the male and female into three major components. He should be able to identify the parts of the reproductive tract and explain the functions of each. This knowledge will be evidenced by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of instruction, the student should be able to:

1. Define five terms associated with the reproductive organs of farm animals.
2. Divide the male reproductive system into three components.
3. Name the four main functions of the epididymis.
4. Describe the function of five parts of the male reproductive tract.
5. Identify the parts of the reproductive system into three major components.
7. Name the three hormones produced by the ovaries.
8. Discuss the function of five parts of the female reproductive tract.
9. Identify the parts of the reproductive tract of a cow.
10. Name the primary organ of reproduction in the male and female.
11. Name the major function of the testes.
12. Name the major function of the ovaries.
13. Distinguish between the spermatic cord and the vas deferens.
14. Name the hormone that could be used to synchronize the estrus period of some females.
15. State in writing if a cryptorchid male with both testicles retained in body cavity can produce good quality semen.

REPRODUCTIVE ORGANS OF FARM MAMMALS
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:
   - A. Provide students with objective sheet.
   - B. Provide students with information sheets.
   - C. Make transparencies.
   - D. Discuss terminal and specific objectives.
   - E. Discuss information sheets.
   - F. Secure a reproductive tract of a cow to show the class.
   - G. Secure slides and tapes from Curriculum Center to show the class.
   - H. Give test.

II. Students:
   - A. Read objective sheet.
   - B. Study information sheets.
   - C. Study reproductive tract and identify parts.
   - D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   - A. Objectives
   - B. Information sheets
   - C. Transparency masters
     1. TM 1 - Reproductive Tract of a Bull
     2. TM 2 - Reproductive Tract of a Cow
     3. TM 3 - Reproductive Tract of a Sow

REPRODUCTIVE ORGANS OF FARM ANIMALS
UNIT I

INFORMATION SHEET

I. Terms and definitions

   A. Estrus - The period during which sexual receptivity of the female to courtship and copulation is evident (sign of external heat)

   B. Embryo - A young fetus in the early stages of development

   C. Gonad - A primary sex gland; an ovary or testis.

   D. Zygote - The cell produced by the union of sperm and ovum (egg) at fertilization

   E. Ejaculation - The moving of sperm from the epididymis through the penis into the female.

   F. Sex Hormones - The internal body secretions that aid in reproduction.

   G. Fertilization - The uniting of the male and the female germ cells.

   H. Fimbria - The opening to the fallopian tube which catches the egg as it leaves the ovary.

II. Components of male reproductive systems

   A. Primary sex organs

      1. Gonads

      2. Testes or testicles

   B. Accessory sex organs

      1. Epididymis

      2. Vesicular glands

      3. Prostate

   C. Copulatory organ - penis

III. Functions of the epididymis

   A. Transportation of sperm

   B. Concentration of sperm

   C. Maturation of sperm

   D. Storage of sperm

IV. Function of male reproductive organs (Transparency 1)

A. Testes - Produce spermatozoa, the male germ cells

B. Epididymis- Collects and stores the sperm

C. Vas deferens - Transports spermatozoa and serves as a storage place for spermatozoa until ejaculation.

D. Ampulla - Location of fructose and citric acid formation

E. Penis - Transports sperm from the male to the female.

F. Uretha - Transports urine from the bladder to the vulva of the female or penis of the male and is also a passageway for sperm in the male.

G. Cowpers gland - Secretes an alkaline material which serves to to clean the uretha prior to ejaculation and produces a lubricating substance.

H. Prostate gland - Secretes a high mineral composition (composition unknown)

I. Seminal vesicle - Secretes a substance high in simple sugar (fructose) which serves as a nutrient for spermatozoa transport.

J. Retractor penis muscle - Extends and retracts the penis during copulation

K. Scrotum - Maintains the temperature of the testes and serves as protection for the testes.

(NOTE: Scrotum temperature ranges from 1-5 degrees F, below body temperature.)

L. Sheath - Opening around the male reproductive tract

M. Spermatic cord - Contains vessels, nerves and vas deferens

V. Components of female reproductive tract (Transparencies 2 and 3)

A. Sex organs - Ovaries

B. Reproductive tract

1. Fallopian tubes
2. Uterus
3. Cervix
4. Vagina

C. External genitalia (Vulva)

1. Vestibule
2. Clitoris
3. Labia
4. Glands

VI. Hormones produced by ovaries

- A. Estrogen
- B. Progesterone
- C. Relaxin

VII. Function of female reproductive organs

- A. Vulva - Opening of the female reproductive tract
- B. Clitoris - Increases sexual excitement of female during copulation
- C. Vagina - Channel for birth of fetus; receives male penis during copulation
- D. Cervix - Serves as a divider between the vagina and the uterus; secretes a fluid or mucus that, when pregnancy occurs, forms a plug at end of cervix inside the uterus.
- E. Uterus - Place where fetus develops at later stages of pregnancy
- F. Horns of uterus - Place where the embryo develops into the fetus
- G. Fallopian tube - Place where fertilization occurs
- H. Ovaries - Produce female germ cells

VIII. Primary organs of reproduction

- A. Male - Testes (production of sperm)
- B. Femal - Ovaries (production of egg cells)

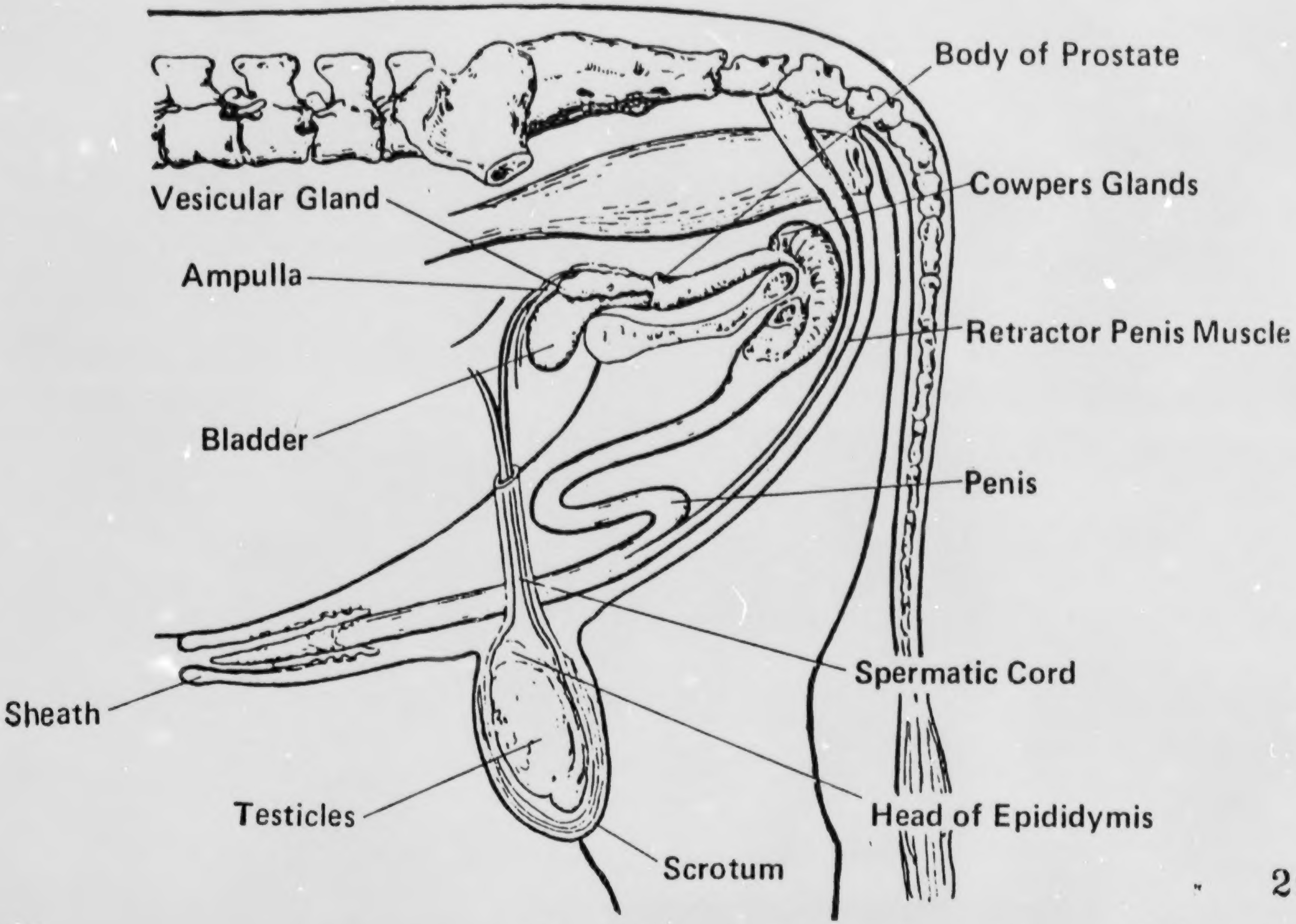
IX. Difference between spermatic cord and vas deferens

- A. Spermatic cord supports testicles and contains vessels, nerves and vas deferens
- B. Vas deferens stores and transports spermatozoa

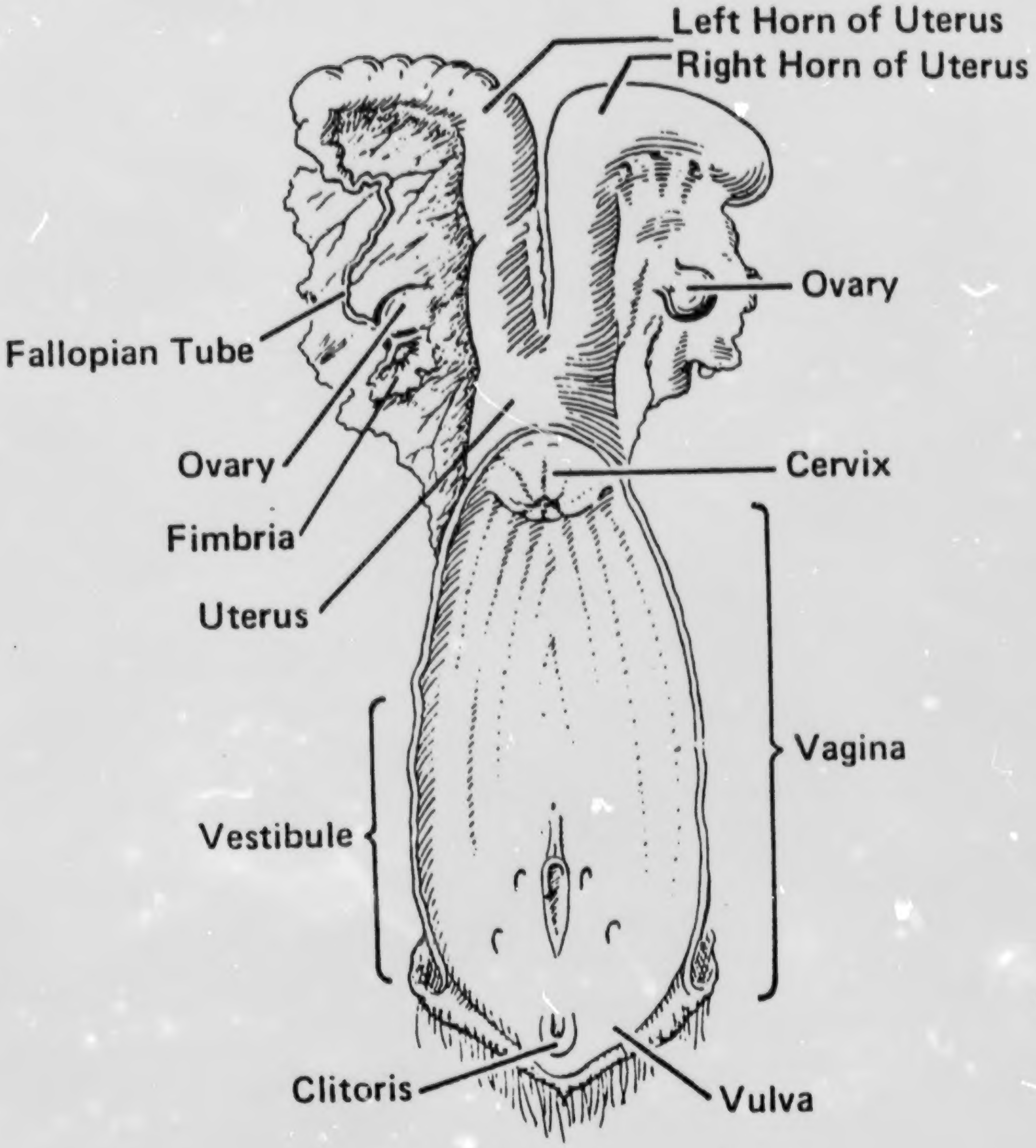
X. Progesterone - Hormone necessary to synchronize estrus

XI. Cryptorchid male - A male animal with one or both testicles that did not descend into the scrotum and is sterile if both testicles are inside the body.

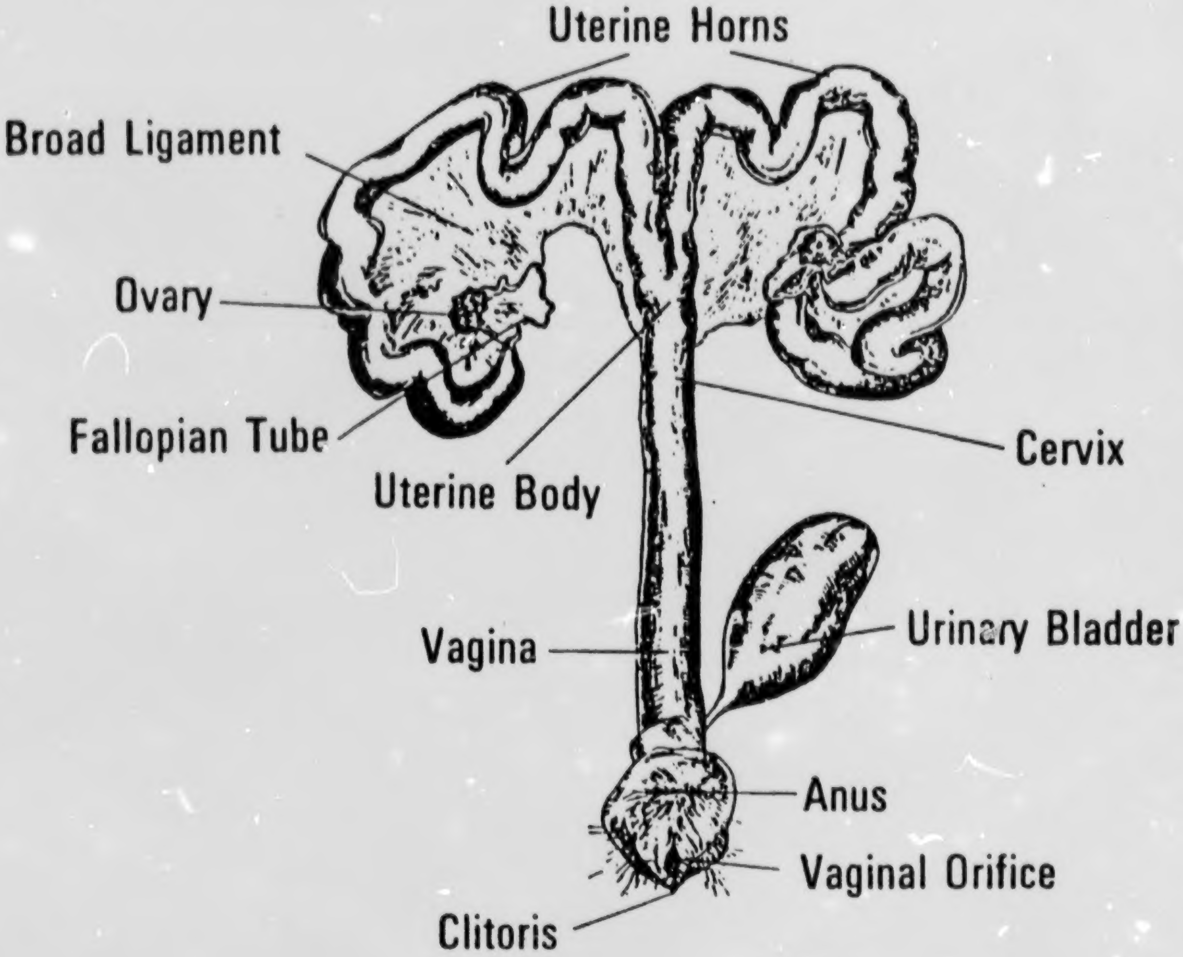
Reproductive Tract of a Bull


Body of Prostate
Vesicular Gland
Cowpers Glands
Ampulla
Retractor Penis Muscle
Bladder
Penis
Spermatic Cord
Sheath
Testicles
Head of Epididymis
Scrotum

Reproductive Tract of a Cow


Left Horn of Uterus
Right Horn of Uterus
Ovary
Fallopian Tube
Ovary
Fimbria
Uterus
Cervix
Vagina
Vestibule
Clitoris
Vulva

Reproductive Tract of a Sow


Uterine Horns
Broad Ligament
Ovary
Fallopian Tube
Uterine Body
Cervix
Vagina
Urinary Bladder
Anus
Vaginal Orifice
Clitoris

REPRODUCTIVE ORGANS OF FARM ANIMALS
UNIT I

TEST

1. Define the following terms.
   a. Zygote -
   b. Estrus -
   c. Ejaculation -
   d. Fertilization -
   e. Gonad -

2. The male reproductive tract is divided into three main components. Name them.
   a.
   b.
   c.

3. Name the four main functions of the epididymis.
   a.
   b.
   c.
   d.

4. Describe the functions of the following parts of the male reproductive tract.
   a. Scrotum -
   b. Retractor penis muscle -
   c. Spermatic cord -
   d. Vas deferens -
   e. Testes -

5. The female reproductive tract is divided into three main components. Name them.
   a.
   b.
   c.

6. Name the three hormones produced by the ovaries.
   - a.
   - b.
   - c.

7. Discuss the function of the following parts of the female reproductive tract.
   - a. Vagina -
   - b. Uterus -
   - c. Fallopian tube -
   - d. Vulva -
   - e. Horns of uterus -

8. Name the primary reproductive organs of the following.
   - a. Male -
   - b. Female -

9. What is the difference between the spermatic cord and the vas deferens?

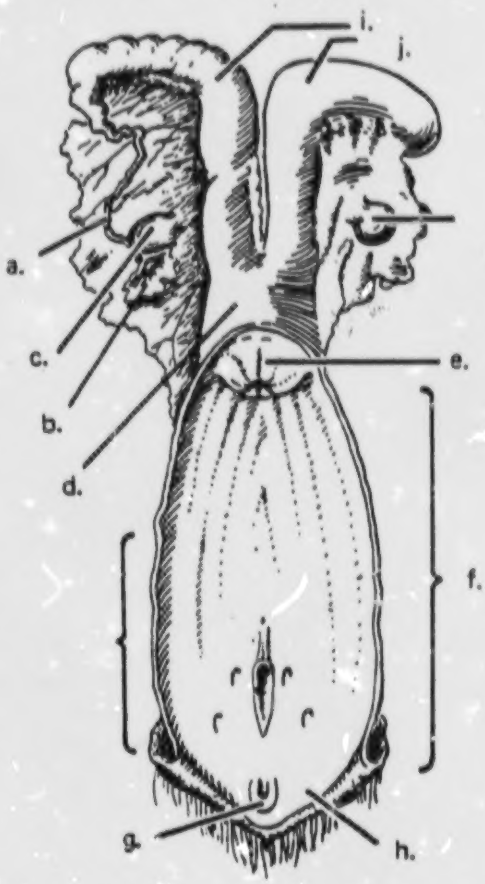
10. What hormone is used to synchronize the estrus period of some females?

11. What do the testicles produce?

12. What do the ovaries produce?

13. Can a cryptorchid male with both testicles retained produce fertile semen?

14. Identify the parts of the female reproductive tract below.


i.
j.
a.
c.
b.
d.
e.
f.
g.
h.

a.______________________________ f.______________________________

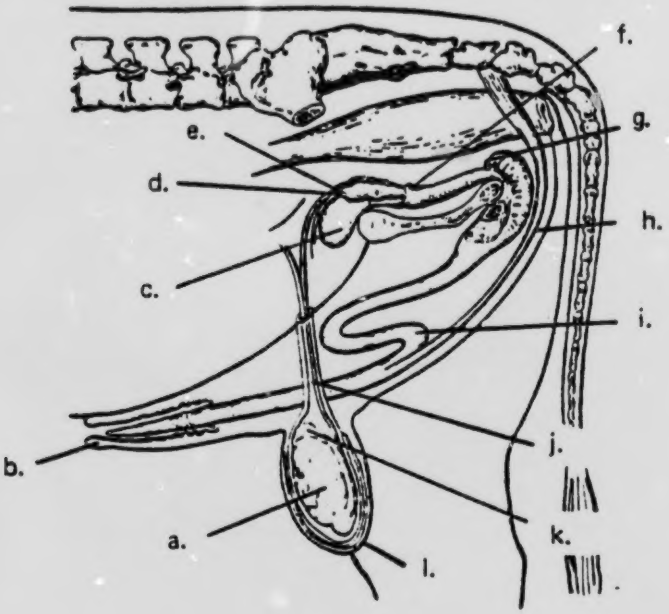
b.______________________________ g.______________________________

c.______________________________ h.______________________________

d.______________________________ i.______________________________

e.______________________________ j.______________________________

15. Identify the parts of the male reproductive tract below.


f.
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a.______________________________

b.______________________________

c.______________________________

d.______________________________

e.______________________________

f.______________________________

g.______________________________

h.______________________________

i.______________________________

j.______________________________

k.______________________________

l.______________________________

REPRODUCTIVE ORGANS OF FARM MAMMALS
UNIT I

ANSWERS TO TEST

1. a. The cell produced by the union of sperm and ovum at fertilization
   b. Period during which sexual receptivity of the female to courtship and copulation is evident
   c. The moving of sperm from the epididymis through the penis into the vagina of the female
   d. The uniting of the male and female germ cells
   e. A primary sex gland; an ovary or testes

2. a. Primary sex organs
   b. Accessory sex organs
   c. Copulatory organ

3. a. Transportation of sperm
   b. Storage of sperm
   c. Concentration of sperm
   d. Maturation of sperm

4. a. Maintains temperature of the testes and serves as protection for the testicles
   b. Extends and retracts the penis during copulation
   c. Supports the testes and contains vessels, nerves and vas deferens
   d. Transports spermatozoa and serves as a storage place for spermatozoa until ejaculation
   e. Produces spermatozoa, male germ cells

5. a. Sex organs
   b. Reproductive tract
   c. External genitalia

6. a. Estrogen
   b. Progesterone
   c. Relaxin

7. a. Channel for birth of fetus and receives male penis during copulation
   b. Place where fetus develops at later stages of pregnancy
   c. Place where fertilization occurs
   d. Opening of the female reproductive tract
   e. Place where embryo develops into the fetus

8. a. Testes
   b. Ovaries

9. Spermatic cord supports testicles and contains vessles, nerves and vas deferens, and the vas deferens stores and transports the spermatozoa

10. Progesterone

11. Sperm

12. Female egg cells

13. No

14. a. Fallopian tube
    b. Fimbria
    c. Ovary
    d. Uterus
    e. Cervix
    f. Vagina
    g. Clitoris
    h. Vulva
    i. Left horn of uterus
    j. Right horn of uterus

15. a. Testicles
    b. Sheath
    c. Bladder
    d. Ampulla
    e. Vesicular gland
    f. Body of prostate gland

g. Cowpers glands
h. Retractor penis muscle
i. Penis
j. Spermatic cord
k. Head of epididymis
l. Scrotum

ANIMAL NUTRIENTS

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to recognize and use the major nutrients in a livestock feed ration. The student should be able to name functions of nutrients and recognize deficiencies. This will be evidenced by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Define six terms that deal with animal nutrients.
2. Name the six major nutrients.
3. Distinguish between the two types of proteins.
4. Match nutrients with their appropriate functions.
5. Select from a list the major minerals.
6. Name three minor minerals.
7. Name or match the correct sources for each of the following nutrients:
    a. Vitamins
    b. Minerals
    c. Proteins
    d. Carbohydrates
    e. Fats
8. Match the deficiency symptoms of vitamins and minerals when given a list of the vitamins and minerals.
9. Name four factors to consider when using feed additives.
10. Name two purposes of growth stimulants as a feed additive.
11. Name two growth stimulants.
12. Discuss antibiotics as used in feed additives.
13. List two antibiotics used in feed additives.

ANIMAL NUTRIENTS

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide students with objective sheet
- B. Provide students with information sheet
- C. Discuss terminal and specific objectives
- D. Discuss information sheet
- E. Discuss with students job opportunities that are available with the feed industry
- F. Give test

II. Students:

- A. Read objective sheet
- B. Study information sheet
- C. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Transparency master
  - TM 1 - Major nutrients
- D. Test
- E. Answers to test

II. References:

- A. Approved Practices in Feeds and Feeding, Daniel W. Cassard and Elwood M. Juergenson, The Interstate Printers and Publishers, Inc., Danville, Illinois.
- B. Morrison Feeds and Feeding, Frank B. Morrison, Morrison Publishing Company, Clinton, Iowa.
- C. Instructional Materials for Vocational Agriculture II, Teaching Materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.
- D. Nutrient Requirements for Beef Cattle, National Academy of

Sciences, Fourth Edition, 1970.

E. "Liquid Feed Supplement", XC-476, Cooperative Extension Service & Agricultural Experiment Station, Kansas State University , Manhattan, Kansas 66506.

F. "Cow Herd Nutrition", XC-582, Cooperative Extension Service & Agricultural Experiment Station, Kansas State University, Manhattan, Kansas 66506.

G. "Beef Cattle Nutrition", XC-583, Cooperative Extension Service & Agricultural Experiment Station, Kansas State University, Manhattan, Kansas 66506.

ANIMAL NUTRIENTS

INFORMATION SHEET

I. Terms and definitions

A. Nutrient - The part of feed which supplies building materials and energy fuel for animals.

B. Total digestible nutrients (TDN) - The proportion of a feed which is usable to supply energy to animals.

C. Feed additives - The substances added to a ration to perform a specified function.

D. Protein - The nutrient which supplies building materials for body growth and repair.

E. Digestible protein - The proportion of a feed which represents protein the animal can use.

F. Starch - A carbohydrate which supplies energy to animals.

G. Vitamins - The complex chemicals essential for normal body functions.

H. Minerals - The elements which are necessary for proper body functions and life processes.

I. Amino acids - The building blocks of protein.

J. Antibiotics - The substances used in small amounts to help prevent and control certain disease in animals.

K. Urea - A synthetic protein substitute used in a ruminant's ration.

L. Essential amino acids - Those that cannot be produced by the animal itself.

II. Major nutrients

A. Water

B. Proteins

C. Carbohydrates

D. Minerals

E. Vitamins

F. Fats

III. Types of proteins
    A. Plant
        1. Soybean meal
        2. Cottonseed meal
        3. Linseed meal
        4. Peanut oil meal
    B. Animal
        1. Tankage
        2. Fish meal
        3. Meat scraps
        4. Dried milk products

IV. Functions of nutrients
    A. Water
        1. Removes waste material
        2. Regulates body temperature
        3. Dissolves food particles
        4. Maintains osmotic pressure
        5. Maintains structure of cells
        6. Carries dissolved food materials
    B. Proteins
        1. Develop muscle tissue
        2. Supply energy
        3. Repair and maintain worn-out body tissue
    C. Carbohydrates
        1. Supply energy
        2. Supply heat
        3. Store energy as body fat
    D. Minerals
        1. Skeletal structure
        2. Chemical reaction
        3. Regulate pH of digestive tract fluids
        4. Essential in all body processes

- E. Vitamins
    - 1. Vitamin A
        - a. Aids in development of nerve cells
        - b. Aids in development of tissues
        - c. Aids in disease resistance
        - d. Aids in development of embryo
    - 2. Vitamin D
        - a. Builds bones
        - b. Builds teeth
        - c. Assimilates Ca and P in the body
    - 3. Vitamin E - Aids in reproduction
    - 4. Vitamin K - Aids in blood clotting
    - 5. Vitamin B
        - a. Prevents disease
        - b. Promotes growth
        - c. Prevents skin infections
- F. Fats
    - 1. Source of energy
    - 2. Storage of energy in body
    - 3. Source of insulation

V. Major minerals

- A. Calcium
- B. Phosphorus
- C. Sodium chloride
- D. Potassium
- E. Sulfur

VI. Minor minerals

- A. Iron
- B. Copper
- C. Zinc
- D. Iodine
- E. Cobalt
- F. Magnesium

VII. Sources of nutrients

- A. Proteins
  1. Cottonseed meal
  2. Linseed meal
  3. Soybean meal
  4. Skim milk
  5. Tankage
  6. Alfalfa hay
- B. Carbohydrates
  1. Cereal grains
  2. Non-legume roughage
  3. Molasses
- C. Minerals
  1. Calcium - Good quality roughage
  2. Phosphorus - High protein concentrate, steamed bone meal, and rock phosphorus
  3. Sodium chloride - Salt block
  4. Potassium - Feed sources
  5. Sulfur - Feed sources
  6. Iron - Good roughage
  7. Copper - Feed sources (Use pre-mix)
  8. Zinc - Feed sources (Use pre-mix)
  9. Iodine - Iodized salt
  10. Magnesium - Magnesium sulphate
- D. Vitamins
  1. A - Alfalfa hay, dehydrated alfalfa meal, and fish oil
  2. B - Produced in the rumen (Commercial sources)
  3. D - Sun cured hay of good quality
  4. K - Produced in the rumen (Commercial sources)
  5. E - Good quality leafy alfalfa hay or green feed and cereal grains
- E. Fats
  1. Tallow
  2. Animal products
  3. Seeds

VIII. Deficiency symptoms of vitamins and minerals

- A. Vitamins
    - 1. Vitamin A
        - a. Blindness
        - b. Loss of young
        - c. Poor development of bones
        - d. Slow growth
    - 2. Vitamin D
        - a. Bone deformities
        - b. Rickets
    - 3. Vitamin E - Loss of young
    - 4. Vitamin K
        - a. Internal bleeding
        - b. Lung deformities resulting in death
    - 5. Vitamin B complex
        - a. Muscular weakness
        - b. Abnormalities in young
- B. Minerals
    - 1. Calcium
        - a. Rickets
        - b. Broken bones
        - c. Poor gains
        - d. Milk fever
    - 2. Phosphorus
        - a. Lameness
        - b. Stiffness of joints
        - c. Lower appetite
        - d. Lower rate of gain
        - e. Lower milk production
        - f. Decreases heat cycle
    - 3. Sodium chloride
        - a. Lack of appetite
        - b. Unthrifty appearance
    - 4. Potassium
        - a. Slow growth rate
        - b. Reduced feed consumption

        - c. Stiffness
        - d. Shock
    - 5. Sulfur - Unthriftiness
    - 6. Iron - Anemia
    - 7. Iodine
        - a. Hairless pigs
        - b. Goiter
    - 8. Copper - Anemia
    - 9. Cobalt
        - a. Loss of appetite
        - b. Unthriftiness
        - c. Delayed sexual development
    - 10. Magnesium
        - a. Reduced fertility
        - b. Abortion
        - c. Deformed young
        - d. Enlarged joints
        - e. Stiffness
        - f. Twisted legs

IX. Factors to consider when using feed additives
- A. Policies set by local feed firms
- B. Precautions when using feed additives
- C. FDA and State Standards and regulations
- D. Veterinarian recommendations

X. Purposes of growth stimulants
- A. Stimulate weight gains
- B. Reduce feed requirements per unit of gain

XI. Feed additives
- A. Stilbestrol
- B. Progesterone
- C. Testosterone

XII. Use of antibiotics in feed additives

A. Increase gains

B. Prevent certain diseases

XIII. Antibiotics used in feed additives

A. Aureomycin

B. Terramycin

C. Penicillin

D. Streptomycin

MAJOR NUTRIENTS

CARBOHYDRATES

FATS

MINERALS

PROTEINS

VITAMINS

WATER

ANIMAL NUTRIENTS

TEST

1. Match the following terms with the appropriate definitions on the right.

_____a. Feed additives
_____b. Proteins
_____c. Vitamins
_____d. Minerals
_____e. Amino acids
_____f. Starches
_____g. Essential amino acids

1. Complex chemicals essential for normal body functions
2. Building blocks of protein
3. Elements which are necessary for proper body functions and life processes
4. Nutrients which supply building material for body growth and repair
5. Carbohydrates which supply energy to animals
6. Substances added to a ration to perform a specified function
7. Amino acids, those that cannot be produced by the animal itself

2. Name the six major nutrients.

a.
b.
c.
d.
e.
f.

3. From the list below, place a "P" in front of each plant protein and an "A" in front of each animal protein.

_____a. Tankage
_____b. Soybean meal
_____c. Cottonseed meal
_____d. Fish meal
_____e. Meat scraps
_____f. Linseed meal
_____g. Dried milk products

4. Match the feed nutrients on the left with their appropriate functions on the right. All functions may be used.

_____a. Proteins
_____b. Carbohydrates
_____c. Fats
_____d. Vitamins
_____e. Minerals
_____f. Water
_____g. Peanut oil meal

1. Develops skin tissue
2. Develops nerve tissue
3. Source of energy
4. Removes waste material
5. Regulates body temperature
6. Stores energy in body
7. Insulation
8. Skeletal structure

5. Which minerals listed below are considered major minerals? Place an "X" beside each major mineral.

_____a. Sulfur
_____b. Potassium
_____c. Cobalt
_____d. Calcium
_____e. Iodine
_____f. Iron
_____g. Phosphorus

6. Name three minor minerals.

a.
b.
c.

7. A. Name four sources of protein in animal nutrients

a.
b.
c.
d.

B. Match the sources on the right with their appropriate nutrients.

_____a. Carbohydrates
_____b. Fats

1. Tallow
2. Cereal grains
3. Molasses
4. Animal fats
5. Seeds

C. Match the minerals on the left with their appropriate source on the right. All sources given may be used.

_____a. Calcium
_____b. Phosphorus
_____c. Potassium
_____d. Sodium chloride
_____e. Iron

1. Trace mineralized salt
2. High forage ration
3. Salt
4. Steamed bone meal
5. Rock phosphate
6. Good quality roughage

D. Match the vitamins on the left with their appropriate source on the right. Sources may be used twice, and all sources given may be used.

_____a. Vitamin A
_____b. Vitamin B
_____c. Vitamin D
_____d. Vitamin E
_____e. Vitamin K

1. Green plants and cereal grains
2. Sun cured hay
3. Fish oil
4. Produced in rumen (Commercial sources)
5. Dehydrated alfalfa meal
6. Good quality alfalfa hay

8. A. Match the deficiencies on the right with the vitamins on the left. All deficiencies may be used.

_____a. Vitamin B
_____b. Vitamin D
_____c. Vitamin K
_____d. Vitamin A
_____e. Vitamin E

1. Internal bleeding
2. Muscular weakness
3. Loss of young
4. Rickets
5. Blindness

B. Match the minerals with their deficiency symptom by placing the number of the deficiency by the mineral.

_____a. Calcium
_____b. Phosphorus
_____c. Potassium
_____d. Iron
_____e. Magnesium
_____f. Iodine

1. Lameness
2. Anemia
3. Rickets
4. Hairless pigs
5. Goiter
6. Abortion
7. Stiffness

9. Name four factors to consider when using feed additives.

a.
b.
c.
d.

10. Name two purposes of growth stimulants as a feed additive.

    a.

    b.

11. Name two growth stimulants.

    a.

    b.

12. Why are antibiotics used as a feed additive?

13. Name two antibiotics most commonly used as feed additives.

    a.

    b.

ANIMAL NUTRIENTS

ANSWERS TO TEST

1. a. 6
   b. 4
   c. 1
   d. 3
   e. 2
   f. 5
   g. 7

2. a. Water
   b. Carbohydrates
   c. Fats
   d. Proteins
   e. Vitamins
   f. Minerals

3. a. A
   b. P
   c. P
   d. A
   e. A
   f. P
   g. A

4. a. 3
   b. 3
   c. 3,6,7
   d. 1,2
   e. 8
   f. 4,5

5. a. X
   b. X
   c. ____
   d. X
   e. ____
   f. ____
   g. X

6. Any three of the following:

   a. Iron
   b. Copper
   c. Zinc
   d. Iodine
   e. Cobalt
   f. Magnesium

7. A. Any four of the following:

   a. Cottonseed meal
   b. Linseed meal
   c. Soybean meal
   d. Skim milk
   e. Tankage
   f. Alfalfa hay

B. a. 2,3
   b. 1,4,5
C. a. 6,5
   b. 4,5
   c. 2
   d. 3
   e. 1
D. a. 5,6
   b. 4
   c. 2
   d. 1,6
   e. 4

8. A. a. 2
   b. 4
   c. 1
   d. 5
   e. 3
B. a. 3
   b. 1,7
   c. 7
   d. 2
   e. 6,7
   f. 4,5

9. a. Policies set by local feed firms
   b. Precautions when using feed additives
   c. FDA and State Standards and regulations
   d. Veterinarian recommendations

10. a. Stimulate weight gain
    b. Reduce feed required per unit of gain

11. Any two of the following:
    a. Stilbestrol
    b. Progesterone
    c. Testosterone

12. To increase weight gain and to help control disease.

13. Any two of the following:
    a. Aureomycin
    b. Terramycin
    c. Penicillin
    d. Streptomycin

COMPOSITION AND CLASSIFICATION OF FEEDS

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to discuss the composition of feeds. The student should be able to divide feeds into the various classifications according to Morrison Feeds and Feeding. The student should be able to combine feeds to make a satisfactory ration. The student should score eighty-five percent on a post test.

SPECIFIC OBJECTIVES

After the completion of this unit, the student should be able to:

1. Define six terms associated with feeds and feeding.
2. Complete a chart showing the breakdown of feeds.
3. Distinguish between compound and simple sugars.
4. Match feeds to the proper categories according to Morrison Feeds and Feeding classification.
5. List three requirements that every commercial feed company must state on a feed tag.
6. List the procedures to determine the water and dry matter content of feed.
7. Compare the composition of feeds as to digestible protein and total digestible nutrients using Morrison Feeds and Feeding (Table I).
8. Calculate the digestible protein and total digestible nutrients of feeds.
9. List four factors to consider when formulating rations.
10. Name three methods used to determine the value of feeds.
11. Calculate the cost of protein and total digestible nutrients of feed.
12. Balance a ration using the Pearson Square method.
13. Demonstrate the ability to balance a sample ration for digestible protein, total digestible nutrients and dry matter.

COMPOSITION AND CLASSIFICATION OF FEEDS

SUGGESTED ACTIVITIES

I. Instructor
   A. Provide students with objective sheet
   B. Provide students with information and assignment sheets
   C. Make transparencies
   D. Discuss objective sheet
   E. Discuss information sheet
   F. Demonstrate procedures for working problems contained in assignment sheets
   G. Give test

II. Students
   A. Read objectives
   B. Study information sheet
   C. Demonstrate the ability to accomplish the procedures in the assignment sheets
   D. Take test
   E. Obtain feed samples and feed analysis tags

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   A. Objectives sheet
   B. Information sheet
   C. Transparency masters
      TM 1 - Feed Composition
      TM 2 - Classification of Roughages
      TM 3 - Classification of Concentrates
      TM 4 - Commercial Feed Tag
   D. Supplemental Information Sheets
      #1 - Balancing Rations Using Pearson Square Method
   E. Assignment sheets
      #1 - Determining TDN and Digestible Protein Content of Basic Feeds
      #2 - Balancing Rations Using Pearson Square Method

#3 - Working a Sample Ration for a Fattening Beef Animal
#4 - Working a Sample Ration for Fattening Swine

F. Answers to assignment sheets

G. Test

H. Answers to test

II. References:

A. General Facts on Livestock Feeding, University of Illinois, Urbana, Illinois.

B. Morrison Feeds and Feeding, Frank B. Morrison, The Morrison Publishing Company, Clinton, Iowa.

C. Approved Practices in Feeds and Feeding, Daniel W. Cassard, Elwood M. Juergenson, The Interstate Printers and Publishers, Inc., Danville, Illinois.

D. Swine Feeds and Feeding, University of Illinois, Urbana, Ill.

E. Feeding Dairy Cattle, Farmers Bulletin No. 2153, United States Department of Agriculture.

F. Dairy Cattle Feeding and Management, H. O. Henderson, Paul M. Reaves, John Wiley and Sons, Inc., New York, London.

G. Feeds and Nutrition, M. E. Ensminger and C. S. Olentine, The Ensminger Publishing Company, Clovis, California.

COMPOSITION AND CLASSIFICATION OF FEEDS

INFORMATION SHEET

I. Terms and definitions

A. Roughage - The feeds high in fiber and low in digestible nutrients

B. Silage - The feed crops cured and stored green or without drying

C. Concentrates - The feeds which have a high proportion of digestible nutrients and not much fiber

D. Ration - The daily feed which an animal receives

E. Balanced ration - A ration which contains the nutrients in the amount and proportion needed by an animal

F. Fiber - The tough part of feed which is not very digestible

G. Supplement - Anything which is added to a feed

H. Total digestible nutrients (TDN) - The proportion of a feed which is usable to supply energy to the animal

I. Digestible protein (DP) - The proportion of a feed which represents protein the animal can use

J. Pasturage - The plant growth available to animals on the range or in the pasture

K. Proteins - The organic compounds consisting of C, H, O, N, and S and sometimes P, Fe

L. Fats - The organic compounds of C, H, and O

M. Dry matter (DM) - The average percentage of dry matter in feed found by weighing the feed then drying and re-weighing

N. Net energy - That amount of energy needed to maintain body weight

II. Composition of feeds (Transparency 1)

Water — Dry Matter

Ash (Minerals) — Organic Matter

Protein — Carbohydrates — Fats

Nitrogen Free Extract — Crude Fiber

Simple Sugar — Cellulose
Compound Sugar
Starch

III. Types of carbohydrate sugars
   A. Simple sugar
      1. Glucose
      2. Frutose
      3. Galactose
   B. Compound sugar
      1. Maltose - 2 glucose units
      2. Sucrose - 1 glucose + 1 fructose
      3. Lactose - 1 glucose + 1 galactose

      (NOTE: Carbohydrates are composed of crude fiber and nitrogen free extract. Cellulose is made up of many molecules of glucose.)

IV. Classification of feeds
   A. Roughage (Transparency 2)
      1. Dry
         a. Hays
            1. Grass
            2. Legumes
         b. Hulls
            1. Cottonseed
            2. Peanut
         c. Straws
            1. Wheat
            2. Oats
            3. Barley
      2. Green
         a. Roots
         b. Grasses
         c. Tubers
      3. Silage
         a. Corn forage
         b. Sorghum forage
         c. Grass
   B. Concentrates (Transparency 3)

1. Grains
    a. Corn
    b. Wheat
    c. Oats
    d. Milo
    e. Barley
2. Grain by-products
    a. Wheat bran
    b. Wheat standard millings
3. Molasses
    a. Cane
    b. Beet
4. Oil meals
    a. Soybean
    b. Cottonseed
    c. Linseed
    d. Peanut
5. Animal products
    a. Meat scraps
    b. Tankage
    c. Fish meal
    d. Dried dairy products

(NOTE: Laws govern the sale of commerical feeds, mineral mixtures, and stock tonics to protect the purchaser. The ingredients of a mixture must be labeled, but the percentage of each is not required.)

V. Feed tag requirements (Transparency 4)
    A. Minimum crude protein
    B. Minimum crude fat
    C. Maximum crude fiber

VI. Procedures for determining water and dry matter content of feed
    A. Weigh feed
    B. Dry in oven
    C. Weigh dried feed

D. Subtract dried feed weight from feed weight

(NOTE: The difference in weights is due to the water content of the feed.)

E. Divide difference by the feed weight to obtain water content percentage

(NOTE: Feed grains normally contain 10% water and 90% dry matter.)

VII. Composition of feeds for digestible protein and total digestible nutrients

FEED	DP	TDN
Milo grain	8.5%	79.4%
Corn dent grade #1	6.9%	81.9%
Wheat, average all types	11.1%	80.0%
Oats - Pacific states	7.0%	72.2%
Alfalfa hay, average all types and all analysis	10.9%	50.7%

(NOTE: Figures taken from Morrison Feeds and Feeding.)

VIII. Determining the amount of digestible protein and total digestible nutrients of feeds

A. Determine the percentage of digestible protein (DP) and total digestible nutrients (TDN) of the feeds using Morrison Feeds and Feeding

B. Multiply the percentage of digestible protein and total digestible nutrients in each feed by the number of pounds of the feed to be used in the ration

C. Example:

1. Determine the amount of DP and TDN of 30 pounds of whole cottonseed

2. Cottonseed, whole

DP - 17.1   TDN - 90.8

3. 17.1% DP / 30 Pounds → 5.13 Pounds DP

90.8% TDN / 30 Pounds → 27.24 Pounds TDN

IX. Important factors to consider when formulating feed mixtures

A. Specific nutrient requirements for the livestock or poultry to be fed

B. Palatability of the ingredients to be used

C. Digestibility of the ingredients available

D. Vitamin content of the ingredients available

E. Mineral content of the ingredients

F. Availabiltiy of substitute ingredients

G. Cost of the ingredients

X. Methods of determining the value of feed

A. Cost per pound of TD

B. Cost per pound of protein

C. Cost of feed

XI. Determining the cost of protein and total digestible nutrients

A. Determining the cost of protein

1. Amount of protein in feed
2. Divide selling price of feeds by protein content
3. Example:

	Cost	Protein Content
Corn	3.60 = 39.5 cents per pound*	9.1
Milo	3.15 = 28.8 cents per pound	10.9

* 3.60 ÷ 9.1 = 39.5 cents per pound

B. Determining the cost of total digestible nutrients

1. Amount of TDN in feed
2. Divide selling price of feeds by TDN
3. Example:

	Cost	TDN Content
Corn	3.60 = 4.5 cents per pound*	80.1
Milo	3.15 = 3.4 cents per pound	79.4

* 3.60 ÷ 80.1 = 4.5 cents per pound

XII. Procedures for using the Pearson Square Method

A. Obtain feeding standards for class of livestock from feed composition tables

B. Draw a square and place the desired protein level of the ration in the center of the square

C. At the upper left-hand corner of the square, write the ingredient and its protein content

D. At the lower left-hand corner, write the other ingredient and its protein content

E. Subtract diagonally across the square (the smaller number from the larger number), and record the difference at the corners on the right-hand side

(NOTE: The number at the upper right-hand corner gives the parts of the first ingredient by weight, and the number at the lower right-hand corner gives the parts of the second ingredient by weight to make a ration with the desired protein level.)

F. To determine what percent of the ration would be the first ingredient, divide the parts of the first ingredient by the total parts. The remaining percentage will be the second ingredient.

(NOTE: The Pearson Square Method is a method for balancing one nutrient requirement, with no consideration given to the vitamin, mineral, and other nutritive requirements.)

XIII. Balancing rations for DM, DP, and TDN

A. Figure animal's requirements

B. Figure DM, DP, and TDN of feed to be used in ration

C. Example: 400-pound fattening beef animal

Corn	.850	.075	.800
(7# fed)	7	7	7
	5.95	5.25	5.60
Cottonseed meal	.91	.333	.652
(2# fed)	2	2	2
	1.82	.666	1.30
Cottonseed hulls	.908	0	.437
(5# fed)	5	5	5
	4.54	0	2.18
Requirements for 400-pound fattening beef animal	9.6-12.1	1.05-1.15	7.4-8.6

7-pounds corn	5.95	.525	5.60
2-pounds cottonseed meal	1.82	.666	1.30
5-pounds cottonseed hulls	4.54	.000	2.18
	12.31	1.191	9.08

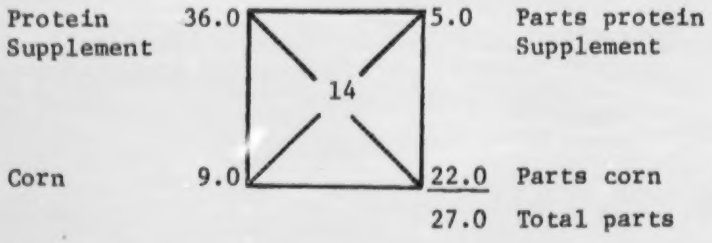
SUPPLEMENTAL INFORMATION SHEET

COMPOSITION AND CLASSIFICATION OF FEEDS

BALANCING RATIONS USING PEARSON SQUARE METHOD

A swine producer has 80-pound pigs to which he desires to feed a 14% protein ration until they reach 150 pounds in weight. He has on hand corn containing 9% protein. He can buy a 36% protein supplement, which is reinforced with minerals and vitamins. The following procedures would be used to determine the percent of corn and protein supplement to produce a 14% protein ration.

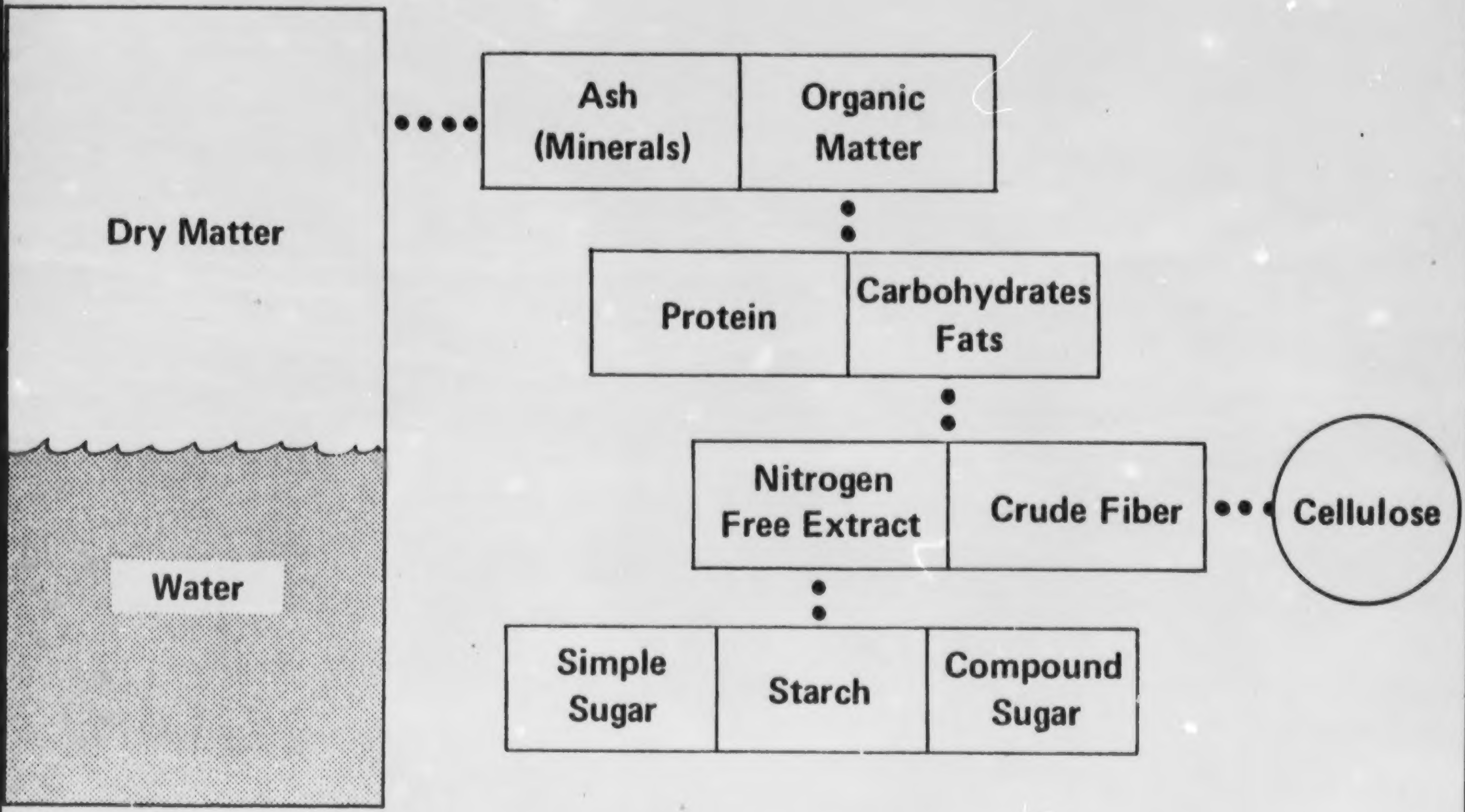
1. Draw a square, and place the number 14 in the center.
2. At the upper left-hand corner of the square, write protein supplement and its protein content (36.0).
3. At the lower left-hand corner of the square, write corn and its protein content (9.0).
4. Subtract diagonally across the square and record the difference at the corners on the right-hand side. (36 - 14 = 22.0; 14 - 9 = 5.0)



(NOTE: The number at the upper right-hand corner gives the parts of concentrate by weight, and the number at the lower right-hand corner gives the parts of corn by weight to make a ration of 14% protein.)

5. To determine what percentage of the ration would be corn, divide the parts of corn by the total parts: 22 ÷ 27 = 81.5% corn. The remainder, 18.%5, would be supplement.

Feed Composition



Dry Matter

Water

Ash (Minerals)

Organic Matter

Protein

Carbohydrates Fats

Nitrogen Free Extract

Crude Fiber

Cellulose

Simple Sugar

Starch

Compound Sugar

331

Classification of Roughages

GREEN ROUGHAGES

- Roots
- Grasses
- Tubers

DRY ROUGHAGES

- Hays–
  - Grass and Legume
- Hulls–
  - Peanut and Cottonseed
- Straw–
  - Oat, Wheat,
    Barley, and Rice

SILAGE

- Corn
- Sorghum
- Grass

Classification of Concentrates

OIL MEALS

- Soybean
- Cottonseed
- Linseed
- Peanut

MOLASSES

- Cane
- Beet

GRAIN BY-PRODUCTS

- Wheat bran
- Wheat standard middlings

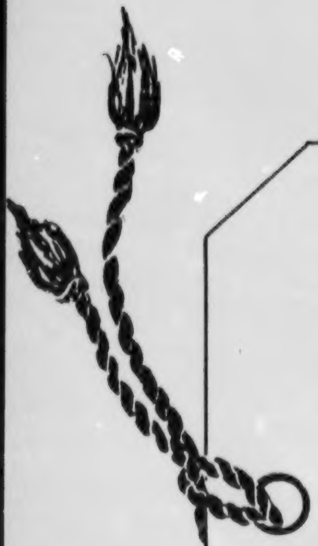
ANIMAL PRODUCTS

- Meat scraps
- Tankage
- Fish meal
- Dried dairy products

GRAINS

- Barley
- Wheat
- Corn
- Milo
- Oats

Commercial Feed Tag



50 Pounds (Net) B & D BRAND SPECIAL CATTLE CUBES

GUARANTEED ANALYSIS

Crude Protein not less than	20.00 Percent
Crude Fat not less than	2.50 Percent
Crude Fiber not more than	14.00 Percent

INGREDIENTS: Composed of grain products, plant protein products, processed grain by-products, animal protein products, dehydrated alfalfa meal (preserved with ethoxyquin), mixed screenings 10%, rice mill by-products 10%, cane molasses, calcium carbonate, defluorinated phosphate, salt, and TRACES of manganous oxide, zinc oxide, ferrous sulphate, copper sulphate, calcium iodate, and cobalt carbonate. (Total added mineral ingredients less than 5%).

Manufactured by

FEEDING DIRECTIONS: A cattle supplement for winter range.

COMPOSITION AND CLASSIFICATION OF FEEDS

ASSIGNMENT SHEET #1 - DETERMINING TDN AND DP
CONTENT OF BASIC FEEDS

Using Morrison Feeds and Feeding (Table 1), calculate the TDN and DP of the follwoing feeds.

I. How many pounds of TDN are there in:

A. 50 pounds of No. 1 yellow corn

B. 30 pounds of milo grain

C. 50 pounds of wheat, average all types

D. 50 pounds of oats, Pacific states

E. 20 pounds of alfalfa hay, all analysis

II. How many pounds of DP are there in each of the above pounds of feed?

A.

B.

C.

D.

E.

COMPOSITION AND CLASSIFICATION OF FEEDS

ASSIGNMENT SHEET #2 - BALANCING RATIONS USING PEARSON'S SQUARE

Determine the total parts needed in a 16% ration using 8.5% DP milo and 41.0% cottonseed meal. Show your work.

COMPOSITION AND CLASSIFICATION OF FEEDS

ASSIGNMENT SHEET # 3 - WORKING A SAMPLE RATION FOR A FATTENING BEEF ANIMAL

Balance a sample ration for an 800-pound fattening beef animal for DM, TDN, and DP. Use Morrison Feeds and Feeding for reference.

Animal Requirements	DM	DP	TDN

Use the Following grains:

Corn dent grade #1 -

Soybean meal 41% -

Cottonseed hulls -

ASSIGNMENT SHEET #4 - WORKING A SAMPLE RATION FOR FATTENING SWINE

Balance a sample ration for a 125-pound swine fattening animal for DM, DP, and TDN. Use Morrison Feeds and Feeding for reference.

	DM	DP	TDN
Animal requirements			

Use the following grains:

Wheat, average all types -

Corn dent grade #1 -

Soybean meal 41% -

COMPOSITION AND CLASSIFICATION OF FEEDS

ANSWERS TO ASSIGNMENT SHEETS

Assignment Sheet #1

I. A. 40.9 pounds TDN
B. 23.8 pounds TDN
C. 40.0 pounds TDN
D. 36.1 pounds TDN
E. 10.1 pounds TDN

II. A. 3.45 pounds DP
B. 2.55 pounds DP
C. 5.55 pounds DP
D. 3.50 pounds DP
E. 2.18 pounds DP

Assignment Sheet #2

I. 25.0 Parts of milo
7.5 Parts of cottonseed meal
33.5 Total parts

Assignment Sheets #3 & #4 - Instructor to supply answers

COMPOSITION AND CLASSIFICATION OF FEEDS

TEST

1. Define the following terms.
   - a. Silage -
   - b. Supplement -
   - c. Concentrate -
   - d. Ration -
   - e. Fiber -
   - f. Protein -

2. Complete the following chart showing the composition of feeds.

a. Water b.

c. Ash d. Organic Matter

e. f.

g. Nitrogen Free Extract h.

i. l. Cellulose

j.

k. Starch

3. In the list of sugars below, place an "S" in front of simple sugars and a "C" in front of compound sugars.

_____a. Glucose

_____b. Maltose

_____c. Sucrose

_____d. Galactose

_____e. Fructose

_____f. Lactose

4. Match the following feeds to the correct category.

_____a. Corn
_____b. Wheat straw
_____c. Soybean meal
_____d. Milo
_____e. Alfalfa hay
_____f. Cottonseed meal
_____g. Wheat bran
_____h. Sorghum forage

1. Dry roughage
2. Green roughage
3. Concentrate
4. Silage

5. List three requirements that must be stated on a commercial feed tag.

a.
b.
c.

6. List the procedures for determining water and dry matter content of feed.

a.
b.
c.
d.
e.

7. List four factors to consider when formulating rations.

a.
b.
c.
d.

8. Name three methods used to determine the value of feeds.

a.
b.
c.

9. Determine which of the following grains would be more economical.

	DP	TDN	COST/CWT
a. Milo	8.5	79.4	$2.00
b. Wheat	11.3	79.6	$1.75

10. Balance a 16% protein ration for a growing pig, using the Pearson Square Method.

__________# Milo

__________# Tankage

Milo - 8.5

Tankage - 60%

COMPOSITION AND CLASSIFICATION OF FEEDS

ANSWERS TO TEST

1. a. The feed crops cured and stored green or without drying.

b. Anything which is added to a feed.

c. The feeds which have a high proportion of digestible nutrients and not much fiber.

d. The daily feed which an animal receives.

e. The tough part of feed which is not very digestible.

f. The organic compound consisting of C, H, O, N, and S, and sometimes P and Fe.

2. b. Dry Matter

e. Protein

f. Carbohydrates and Fats

h. Crude Fiber

i. Simple Sugar

j. Compound Sugar

3. a. S

b. C

c. C

d. S

e. S

f. C

4. a. 3

b. 1

c. 3

d. 3

e. 1 and 2

f. 3

g. 3

h. 4

5. a. Minimum crude protein

b. Minimum crude fat

c. Maximum crude fiber

6. a. Weigh feed
   b. Dry in oven
   c. Weigh dried feed
   d. Subtract dried feed weight from feed weight
   e. Divide difference by the feed weight to obtain water content %

7. Any four of the following:
   a. Specific nutrient requirements for the livestock or poulty to be fed
   b. Palatability of the ingredients to be used
   c. Digestiblity of the ingredients available
   d. Vitamin content of the ingredients available
   e. Mineral content of the ingredients
   f. Availability of substitute ingredients
   g. Cost of the ingredients

8. a. Cost per pound of TDN
   b. Cost per pound of protein
   c. Cost of feed

9. Wheat

10. 7.5# milo
    44# tankage

DISEASES
UNIT V

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to distinguish between infectious, non-infectious, and nutritional diseases. He should be able to recognize various diseases and develop means of control and treatment. He should be able to relate this knowledge to his home farm and community. The student should score eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Write the definitions of five terms associated with livestock diseases.
2. Distinguish between infectious, non-infectious, and nutritional diseases.
3. Divide diseases into four groups - reproductive, calfhood, respiratory, and general.
4. Name three parts of a brucellosis eradication program.
5. Name four ways to control cholera.
6. List species affected by six diseases.
7. Recognize the symptoms of six diseases.
8. Apply treatment of and control for six diseases.
9. Name two ways that cattle may become infected with brucellosis.
10. List three ways that swine may become infected with cholera.

DISEASES
UNIT V

SUGGESTED ACTIVITIES

I. Instructor

   A. Provide students with objective sheet

   B. Provide students with information sheet

   C. Discuss terminal and specific objectives

   D. Discuss information sheet

   E. Give test

II. Students

   A. Read objective sheet

   B. Study information sheet

   C. Take test

INSTRUCTIONAL MATERIAL

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Test

   D. Answers to test

II. References:

   A. Instructional Materials for Vocational Agriculture I, Teaching materials Center, Agricultural Education Department, Texas A & M University, College Station, Texas.

   B. Beef Production, Ronald V. Diggins, Clarence E. Bundy, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

   C. Swine Production, Clarence E. Bundy, Ronald V. Diggins, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

D. Dairy Production, Clarence E. Bundy, Ronald V. Diggins, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

E. Animal Science, M.E. Ensminger, The Interstate Printers and Publishers, Inc., Danville, Illinois.

F. Beef Cattle, Rascoe R. Snapp, John Wiley, and Sons, Inc., New York, New York.

G. Animal Sanitation and Disease Control, R.R. Dykstra, The Interstate Printers and Publishers, Danville, Illinois.

DISEASES
UNIT V

INFORMATION SHEET

I. Terms and definitions

A. Disease - Any departure from a state of health

B. Infectious disease - A disease of men or animals resulting from an infection

C. Infection - The entry and development of a pathogen in or on the body of an animal

D. Non-infectious disease - A disease of men or animals not due to and infection but resulting from physical or chemical agents or metabolic derangement

E. Incidence of disease - The number of cases of a disease occuring during a prescribed time interval

F. Prevalence of disease - The total number of cases of a disease at a particular time

G. Symptom - Any observable sign or evidence of disease

H. Pathogen - Any disease-producing organism

I. Bacteria - Micro-organisms whose bodies are made up of only one cell; they make up a large portion of microscopic life. Cause diseases such as pneumonia, tetanus, and tuberculosis

J. Viruses - Extremely small micro-organisms that can live and multiply within living cells, thus they cannot be killed by antibiotics. Cause diseases such as foot and mouth disease, hog cholera, and rabies

K. Protozoa - Micro-organisms whose bodies are made up of a single cell but are 50 to 100 times larger than bacteria

L. Incubation period - The period between the exposure to the disease agent and the appearance of the first symptoms or signs of the disease

M. Carrier of disease - An animal which harbors in his body the specific organisms of a disease without obvious symptoms

N. Vehicle of disease - Any medium by which a disease agent may be spread

O. Abortion - The expulsion of a dead or immature fetus

II. Animal Diseases

A. Infectious diseases

1. Brucellosis - An infectious type of abortion caused by an organism known as brucella species
2. Leptospirosis - An infectious disease causing abortion
3. Vibriosis - A disease of the reproductive tract of cattle and sheep which is characterized by abortion
4. Trichomoniasis - A true veneral disease of cattle
5. Vaginitis - An infectious disease which localizes in the lining of the vagina
6. Blackleg - An acute disease that usually terminates fatally in twelve to thirty-six hours and principally attacks cattle between three and twenty-four months of age
7. Anaplasmosis - A serious blood disease of cattle caused by the biting insects
8. Foot rot - An infectious disease of the foot caused by a soil organism
9. Cancer eye - A tumor that is located on the eyelid or eyeball of cattle
10. Pinkeye - A very costly disease of cattle caused by glare, irritation, and bacteria
11. Milk fever - A disease caused by a lack of calcium in the blood stream
12. Erysipelas - A disease of swine produced by a micro-organism or bacteria similar to those which cause arthritis in some animals
13. Cholera - One of the most deadly diseases of swine caused by a small virus
14. Swine influenza - A virus infection of swine
15. Shipping fever - A virus infection of cattle resulting from stress
16. Pneumonia - A disease that causes inflammation of the lungs
17. Mastitis - An inflammation or irritation of the udder
18. Warts - A virus infection
19. Red nose - An infectious virus disease of cattle
20. Tuberculosis - A chronic infectious disease affecting cattle, sheep, and swine
21. Atrophic rhinitis - An infectious disease of swine which enters the body through wounds or scratches in the mouth or nose
22. Transmissible gastroenteritis - An infectious, destructive disease among young pigs

        23. Sleeping sickness - A serious disease marked by fever, impaired vision, yawning, grinding of teeth, drowsiness, inability to swallow, inability to rise when down, paralysis and death

        24. Rabies - An acute, often fatal virus disease at the central nervous system, occurring chiefly among carnivorous animals

        25. Psuedorabies - An acute, fatal disease affecting cattle, sheep, and swine, marked by intense itching, drooling, fever, and coughing

    B. Non-infectious diseases

        1. Bloat - A digestive disorder of ruminants

        2. Prussic acid - A poisoning received when cattle graze on frost or drought-damaged Johnsongrass

    C. Nutritional diseases

        1. Anemia - A nutritional deficiency disease

        2. Founder - A nutritional ailment due to overeating or overdrinking

        3. Rickets - A nutritional deficiency disease

        4. Ketosis - A metabolic disorder thought to be a disturbance in the carbohydrate metabolism

III. Groups of diseases

    A. Preproductive

        1. Brucellosis

        2. Leptospirosis

        3. Vibriosis

        4. Trichomoniasis

        5. Vaginitis

    B. Calfhood

        1. Blackleg

    C. Respiratory

        1. Swine influenza

        2. Shipping fever

        3. Pneumonia

        4. Red nose

D. General
   1. Foot rot
   2. Cancer eye
   3. Milk fever
   4. Erysipelas
   5. Cholera
   6. Mastitis
   7. Bloat
   8. Prussic acid
   9. Anemia
   10. Founder
   11. Rickets
   12. Pinkeye
   13. Anaplasmosis
   14. Warts
   15. Ketosis
   16. Transmissible gastroenteritis
   17. Tuberculosis
   18. Atrophic rhinitis

IV. Brucellosis eradication program
   A. Testing of all cows and heifers
   B. Removal of reactors from the herd
   C. Calfhood vaccination of all replacement heifers
   D. Retesting at regular intervals
   E. Isolation of all new animals purchased
   F. Testing of new animals before placing in herd

V. Cholera eradication program

- A. Phase four eradication program - States no vaccination of swine
- B. Cooking of garbage
- C. Prohibiting the use of (live) hog cholera virus
- D. Reporting of all cases of hog cholera

  (NOTE: This is a mandatory procedure introduced by the State Department of Agriculture.)
- E. Disposing of infected animals
- F. Cleaning and disinfection of infected herds
- G. Conforming to interstate and intrastate controls or movement of swine

VI, VII, VIII. Diseases: Species Affected, Symptoms, Treatment and Control

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Brucellosis	Cattle, sheep swine and men	Abortion; retained placenta; repeat breeders	Slaughter infected animals; calfhood vaccinate
Leptospirosis	Cattle, sheep, swine, and men	Abortion; loss of appetite; feverish; heavy breathing; bloody urine; calves may be born, but are weak, death may occur	Blood test; vaccinate all animals; isolate new animals
Vibriosis	Cattle and sheep	Abortion; low conception; temporary infertility	No treatment available; use antibiotics; sexual rest
Trichomoniasis	Cattle	Abortion; low conception; repeat breeding; inflammation of uterus	Sexual rest cows for 3 months after abortion; market infected bulls
Vaginitis	Cattle	Tissue of vagina reddish, roughened, and granular in appearance	Artifical insemination; purchase clean animals
Blackleg	Cattle; less frequently sheep	Sudden sickness or death; high fever; lameness; swelling of muscles; crackling sound may be heard when areas are touched	Burn or bury carcasses; vaccinate sheep 2-4 weeks before shearing, castrating, and docking

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Anaplasmosis	Cattle; sheep to lesser extent	Animals become weak and lag behind herd; skin becomes pale around eyes, on the muzzle, lips, and teats, and then turns yellow	Vaccinate all animals; keep animals from brushy areas; control flies, ticks, and mosquitoes
Foot rot	Cattle and sheep	Lameness; reddening and swelling of skin above hoof between toes	Move animal to dry quarters; trim inflamed foot and wash with warm soapy water; sulfa drugs and antibiotics are effective in treating
Cancer eye	Cattle	A small tumor on eyelid or eyeball; irritation around eye	Early diagnosis followed by surgery; slaughter
Pinkeye	Cattle and sheep	Watering and squinting of eyelid; severe reddening of membrane	Isolate affected animals; use antibiotis for control
Milk fever	Cattle, sheep, and swine	Occurs soon after giving birth; loss of appetite; constipation; nervousness; head usually turned back	Keep good supply of vitamins and minerals available; treat with an injection of calcium intravenously

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Erysipelas	Swine	Purple patches under belly; stiff, swollen knees and hocks	Isolate all sick animals; clean and disinfect pens; vaccinate once or twice a year; use antibiotics for control
Cholera	Swine	Sudden onset; fever; loss of appetite; weakness; drinking considerable water; belly may be purplish-red color; coughing is often evident	Quarantine; isolate; destroy and render
Swine influenza	Swine	Loss of appetite; become distressed; difficult breathing; discharge from eyes; cough is deep and loud; high fever for a few days	Provide warm, clean, well-ventilated quarters; ample supply of fresh water; use of antibiotics
Shipping fever	Cattle, sheep, and swine	High fever; discharge from eyes; hacking cough; difficult breathing; sometimes swelling in region of neck	Provide good feeding and management; vaccinate 3 weeks before stressing cattle
Pneumonia	Cattle, sheep, and swine	High fever; quick, shallow breathing; loss of appetite; crackling noise with breathing; discharge from nose	Isolate sick animals; practice good, sound husbandry; use sulfa drugs and antibiotics

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Mastitis	Cattle, sheep, and swine	Acute: udder becomes hot, very hard, and tender, increase in temperature; milk flow reduced and watery Chronic: milk thick or lumpy Sheep: discharge from teats or gangrene (blue bag)	Eliminate source of udder injury; provide clean bedding; use antibiotics
Warts	Cattle	Growths on the skin varying from very small to large, appearing around teats and head	Isolate cattle; clean and disinfect pens; vaccinate cattle to remove warts; paint infested area with tincture of iodine
Bloat	Cattle and sheep	Enlarged paunch noticeable on the left side	Keep animals on feet and moving; use stomach pump; feed dry hay before turning in to green lush pasture
Prussic acid	Cattle	Staggered walking; animals will go down quickly	Keep cattle from grazing frost or drought-damaged Johnsongrass or sudangrass; prompt treatment will result using nitrate boluses
Anemia	Cattle, sheep, and swine	Loss of appetite; slow and inefficient gains; death	Provide adequate amounts of nutrients; vaccinate suckling pigs

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Founder	Cattle and sheep	Extreme pain; high fever; dropping of hoof soles; turing up of toe walls	Avoid overfeeding of the animal; severe cases should be destroyed
Rickets	Cattle, sheep, and swine	Enlargement of the knee and hock joints; bowed legs	Provide sufficient calcuim, phosphorous, and vitamin D
Red nose	Cattle	Cough; loss of appetite; loss of weight; nasal discharge; rapid breathing; high fever	Vaccine available; practice good sanitation
Ketosis	Cattle and sheep	Cows: Loss of weight and appetite; decline in milk production Sheep: Weakness; frequent urination; trembles when exercised; death usually occurs in 90% of the cases	Glucose injection; feed well-balanced ration; add molasses ration
Transmissible gastroenteritis	Swine	Scouring and vomiting; disease spreads rapidly	No effective treatment available; practice good sanitation;move farrowing grounds

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Tuberculosis	Cattle, sheep, and swine	Very few symptoms; coughing; labored breathing	Practice good sanitation; test and slaughter reactor animal
Atrophic rhinitis	Swine	Starts with baby pigs; show signs of sneezing; snout twisted or distorted	Select replacements from clean herd; slaughter infected animals
Sleeping sickness	All mammals	Fever; impaired vision; irregular gait; yawning; drowsiness	Annual vaccination; no specific agent is available for treatment
Rabies	All warm blooded animals and man	Furious form; loss of appetite; cessation of milk secretion; madness; inability to swallow; butting of the head; posterior paralysis on 4th or 5th day; followed by coma and death on about the 6th day	After disease if fully developed, there is no known cure

IX. Causes of the spreading of brucellosis

  A. Purchase of infected animals
  B. Contact with infected animals over fence lines
  C. Exposure at livestock shows
  D. Livestock trucks and trailers
  E. Public livestock auctions
  F. Aborted calves not disposed of properly

X. Causes of the spreading of cholera

  A. Feed contaminated with urine
  B. Mouth and nose secretions
  C. Drinking unclean water
  D. Garbage feeding

DISEASES
UNIT V

TEST

1. Define the following terms:

   a. Incubation period -

   b. Infection -

   c. Disease -

   d. Symptom -

   e. Abortion -

2. Match the disease with the correct definition.

   _____a. A serious blood disease of cattle caused by biting insects

   _____b. An infectious disease of the foot caused by a soil organism

   _____c. An infectious type of abortion caused by an organism known as brucella species

   _____d. A disease caused from a lack of calcium in the blood stream

   _____e. One of the most deadly diseases of swine caused by a small virus

   _____f. An inflammation or irritation of the udder

   _____g. A digestive disorder of ruminants

   1. Mastitis
   2. Cholera
   3. Bloat
   4. Milk fever
   5. Anaplasmosis
   6. Brucellosis
   7. Foot rot

3. Divide the diseases listed below into groups according to reproductive, calfhood, respiratory, and general. Use the following letters to represent each group of diseases: Rp-Reproductive; C-Calfhood; R-Respiratory; and G-General.

_____a. Foot rot

_____b. Leptospirosis

_____c. Blackleg

_____d. Swine influenza

_____e. Cholera

_____f. Brucellosis

_____g. Milk fever

_____h. Pneumonia

4. Name three parts of a brucellosis eradication program.

   a.

   b.

   c.

5. Name three ways to control hog cholera.

   a.

   b.

   c.

6. Complete the following chart showing species affected, symptoms, and treatment and control for each disease.

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Brucellosis			
Cholera			
Anaplasmosis			

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Pneumonia			
Erysipelas			
Pinkeye			

7. Name two ways cattle may become infected with brucellosis.
   a.
   b.

8. List three ways that swine may become infected with cholera.
   a.
   b.
   c.

DISEASES
UNIT V

ANSWERS TO TEST

1. a. The period between the exposure to the disease agent and the appearance of the first symptoms or signs of the disease
   b. The entry and development of a pathogen in or on the body of an animal
   c. Any departure from a state of health
   d. Any observable sign or evidence of disease
   e. The expulsion of a dead or immature fetus

2. a. 5
   b. 7
   c. 6
   d. 4
   e. 2
   f. 1
   g. 3

3. a. G
   b. Rp
   c. C
   d. R
   e. G
   f. Rp
   g. G
   h. R

4. Any three of the following:
   a. Testing of all cows and heifers
   b. Removal of reactors from the herd
   c. Calfhood vaccination of all replacement heifers
   d. Retesting at regular intervals

e. Isolation of all new animals purchased

f. Testing of new animals before placing in herd

5. a. Quarantine

   b. Isolate

   c. Destroy and render

6.

DISEASE	SPECIES AFFECTED	SYMPTOMS	TREATMENT AND CONTROL
Brucellosis	Cattle, sheep, swine, and men	Abortion; retained placenta; repeat breeders	Slaughter infected animals; calfhood vaccinate
Cholera	Swine	Sudden onset of fever; loss of appetite; weakness; belly may be purplish	Quarantine; isolate destroy and render
Anaplasmosis	Cattle and sheep	Weakness; lagging behind herd; skin becomes pale around eyes, muzzle, lips, and teats, then turns yellow	Vaccinate all animals; keep animals from brushy areas; control flies, ticks, and mosquitoes
Pneumonia	Cattle, sheep, and swine	High fever; quick shallow breathing; loss of appetite; cackling noise with breathing; discharge from nostrils	Isolate sick animals; practice good sound husbandry; use sulfa drugs and antibiotics
Erysipelas	Swine	Purple patches under belly; knees and hocks swollen and stiff	Isolate all sick animals; clean and disinfect pens; vaccinate once or twice a year

Pinkeye	Cattle and sheep	Watering and squinting of eyelids; severe reddening of the membrane	Isolate affected animals; use of antibiotics helps in control

7. Any two of the following:
    a. Purchase of infected animals
    b. Contact with other infected cattle
    c. Exposure at livestock shows
    d. Livestock trucks and trailers
    e. Public livestock auctions
    f. Aborted calves not disposed of properly

8. Any three of the following:
    a. Feed contaminated with urine
    b. Mouth and nose secretions
    c. Drinking unclean water
    d. Garbage feeding

ANIMAL DIGESTION

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to distinguish between the different types of digestive systems of farm animals. The student should be able to recognize the difference between chemical and mechanical digestion. This knowledge will be evidenced by a score of eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Define five terms associated with the digestive process.
2. Label drawings showing the parts of the digestive tract of the cow, pig, and chicken.
3. Distinguish between a simple and a compound stomach.
4. Classify animals according to their types of digestive systems.
5. Name three functions of hormones in the digestive process.
6. List the digestive processes that take place in the mouth.
7. Name five glands that aid in the breakdown of feeds.
8. Distinguish between chemical and mechanical digestion.

ANIMAL DIGESTION

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objectives sheet
   B. Provide students with information sheet
   C. Make transparencies
   D. Discuss terminal and specific objectives with students
   E. Discuss information sheet
   F. Give test

II. Students:

   A. Read objectives sheet
   B. Study information sheet
   C. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives
   B. Information sheet
   C. Transparency masters

      TM 1 - Simple Digestive System of Swine
      TM 2 - Simple Digestive System of the Chicken
      TM 3 - Compound Digestive System of the Cow

   D. Test
   E. Answers to test

II. References:

   A. Approved Practices in Feeds and Feeding, Daniel W. Cassard and Elwood M. Juergenson, The Interstate Printers and Publishers, Inc., Danville, Illinois.
   B. Morrison Feeds and Feeding, Frank B. Morrison, Morrison Publishing Company, Clinton, Iowa.
   C. Dairy Cattle Feeding and Management, H. O. Henderson, Paul M. Reaves, John Wiley and Sons, Inc., New York, New York.

D. Beef Production, Clarence E. Bundy, Ronald V. Diggins, Prentice Hall, Inc., Englewood Cliffs, New Jersey.

E. "Feeding Egg-Producing Chickens", XC-392, Cooperative Extension Service & Agricultural Experiment Station, Kansas State University, Manhattan, Kansas 66506.

F. "Cow Herd Nutrition", XC-582, Cooperative Extension Service & Agricultural Experiment Station, Kansas State University, Manhattan, Kansas 66506.

ANIMAL DIGESTION

INFORMATION SHEET

I. Terms and definitions

  A. Digestion - The process of preparing the food ingredients for passage into the blood stream.

  B. Absorption - The passing of food materials from the digestive tube into the body after they are digested or dissolved.

  C. Enzymes - The organic compounds with power to break down other organic compounds without themselves' being changed.

  D. Hormones - The internal body secretions that regulate various body processes.

  E. Mastication - The grinding or chewing of feed to aid in digestion.

  F. Metabolism - The chemical change which food undergoes within the body.

  G. Excretion - The removal of water and waste material from the body.

  H. Regurgitation - The process whereby food eaten by ruminants is carried from the second stomach and the rumen into the gullet and then forced up to the mouth for chewing.

  I. Feces - The manure or the undigested material and wastes expelled at the end of the digestive tube.

  J. Pancreatic juice - The clear, watery fluid with an alkaline reaction secreted by the pancreas that aids in feed breakdown.

  K. Bile - The thin, yellowish-brown or greenish liquid secreted by the liver.

  L. Ruminant animal - The animal with four compartments in the stomach.

II. Digestive systems of swine, chicken, and cow (Transparencies 1, 2, & 3)

III. Types of stomachs

  A. Simple - one compartment (Transparencies 1 and 2)

  B. Compound - four compartments (Transparency 3)

IV. Classification of animals according to digestive systems

- A. Simple (Transparencies 1 and 2)
  - 1. Pig
  - 2. Horse
  - 3. Chicken
  - 4. Rabbit
  - 5. Man
  - 6. Dog
- B. Compound (Transparency 3)
  - 1. Cow
  - 2. Sheep
  - 3. Goat

  (NOTE: Many texts refer to the horse as being complex)

V. Functions of hormones

- A. Digestion - Example: Pancreatic juice; produced by the pancreas
- B. Metabolism - Example: Thyroxine; produced by thyroid gland
- C. Milk secretion - Example: Lactogen; produced by the pituitary gland
- D. Let-down of milk - Example: Lactogen; produced by the pituitary gland
- E. Development of sexual characteristics - Example: Estrogen, progesterone; produced by the sex glands

VI. Digestive processes in mouth

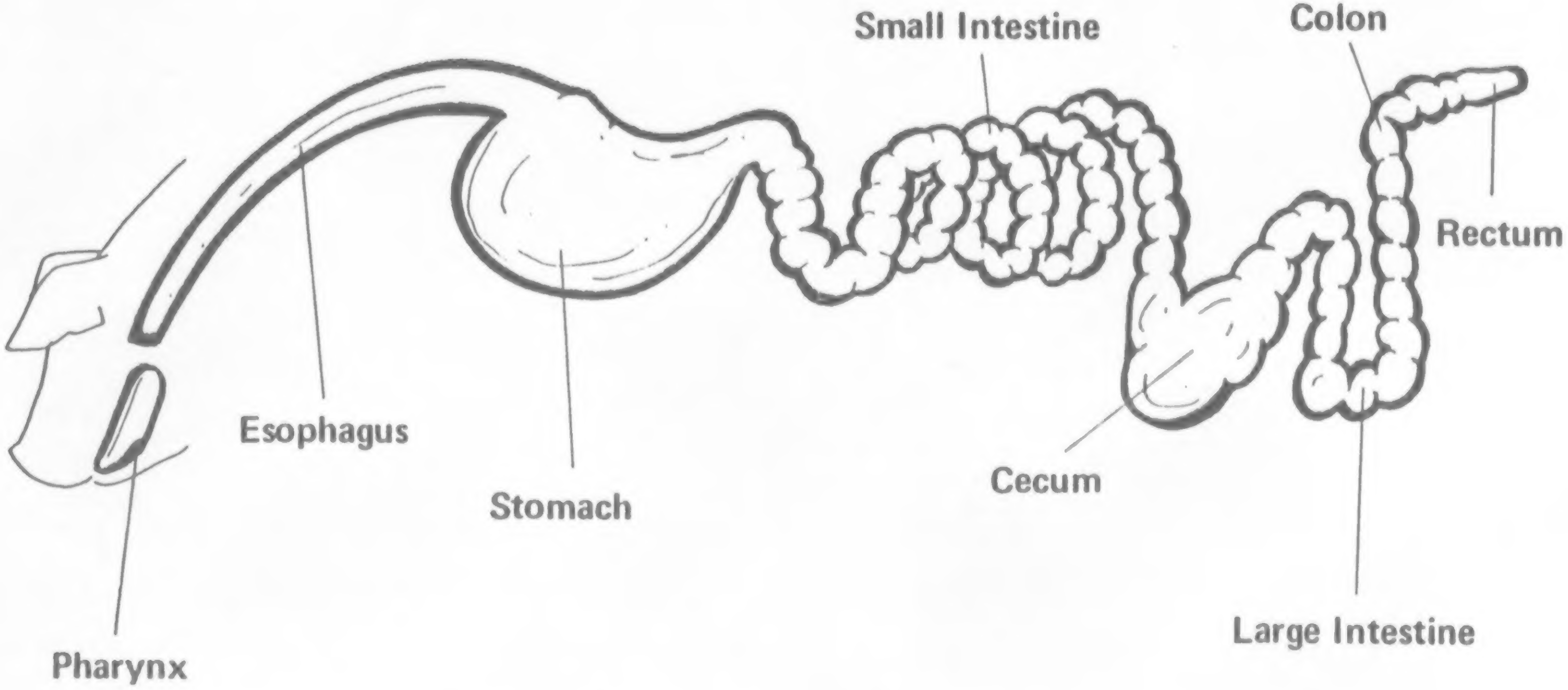
- A. Chewing or grinding of feed
- B. Secretion of saliva

VII. Glands that aid in feed breakdown

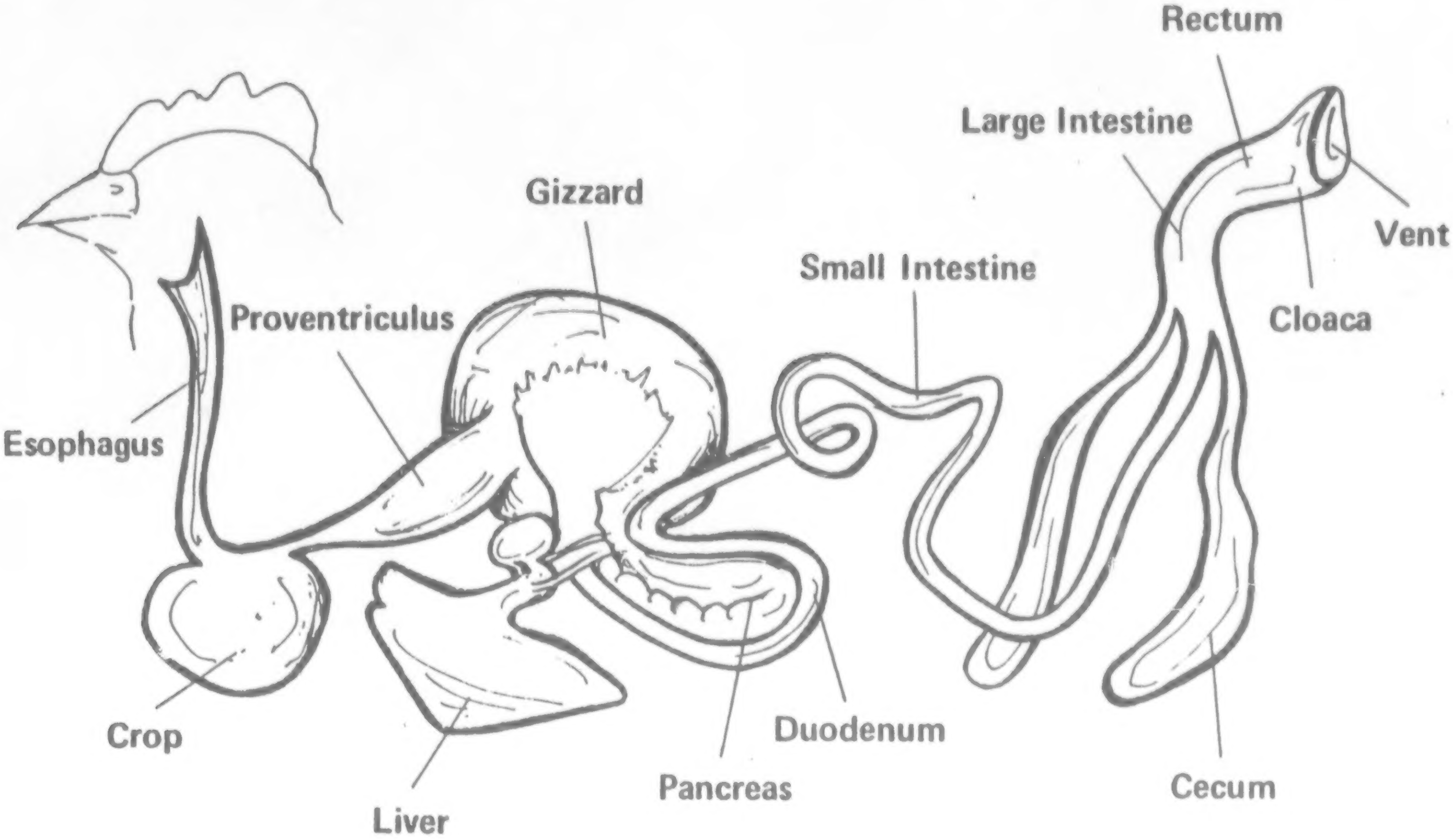
- A. Thyroid - Secretes thyroxine
- B. Parathyroid - Concerned with calcium metabolism
- C. Pituitary - Secretes lactogen
- D. Adrenal - Secretes adrenaline
- E. Pancreas - Secretes pancreatic juice
- F. Liver - Secretes bile, which breaks down fats

VIII. Types of digestion
  - A. Chemical
    - 1. Saliva
    - 2. Juices
  - B. Mechanical
    - 1. Chewing
    - 2. Grinding

Simple Digestive System of Swine

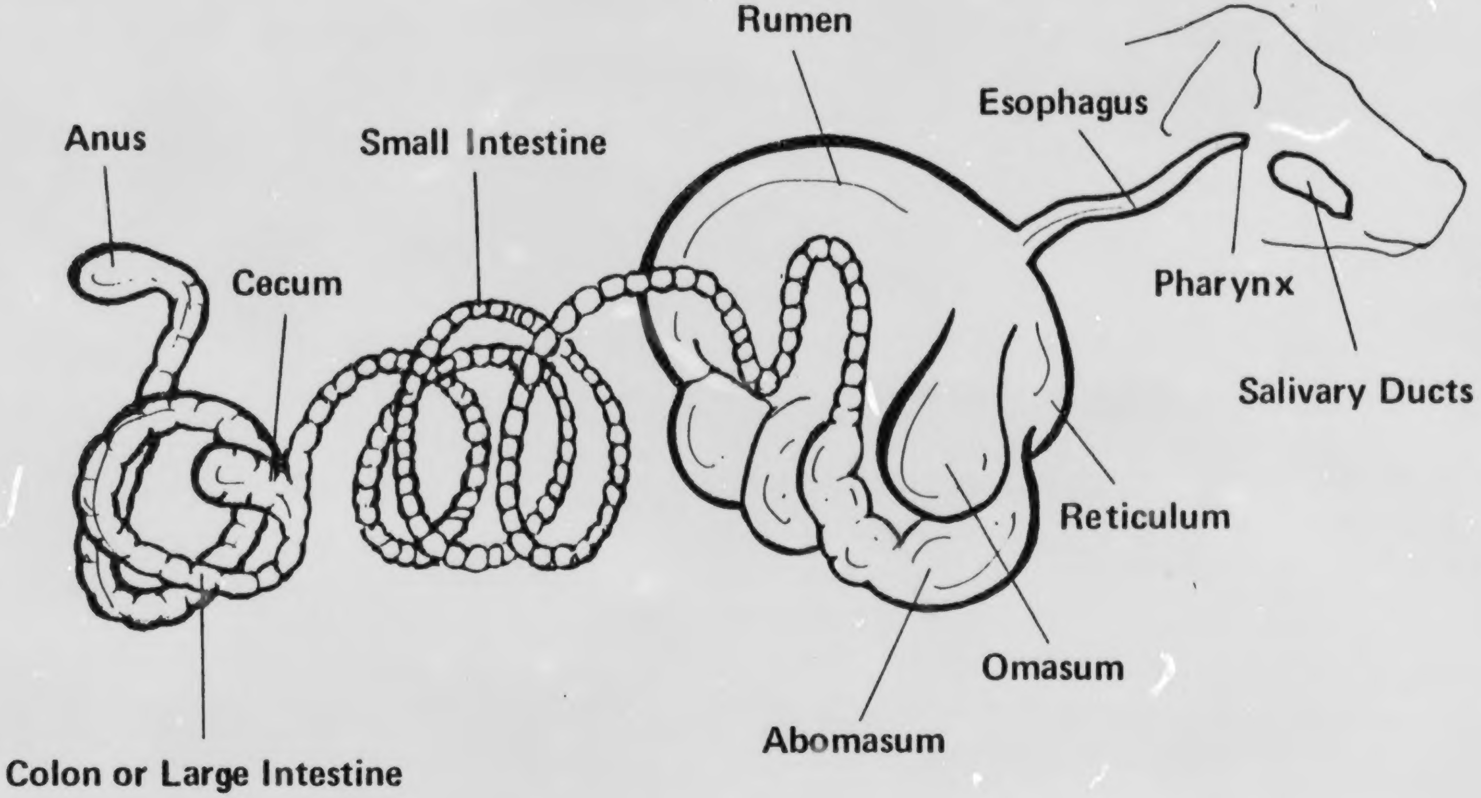

Small Intestine
Colon
Rectum
Esophagus
Stomach
Cecum
Large Intestine
Pharynx

Simple Digestive System of the Chicken


Rectum
Large Intestine
Gizzard
Vent
Small Intestine
Proventriculus
Cloaca
Esophagus
Crop
Duodenum
Pancreas
Cecum
Liver

TM 2

Compound Digestive System of the Cow


Rumen
Esophagus
Anus
Small Intestine
Cecum
Pharynx
Salivary Ducts
Reticulum
Omasum
Abomasum
Colon or Large Intestine

TM 3

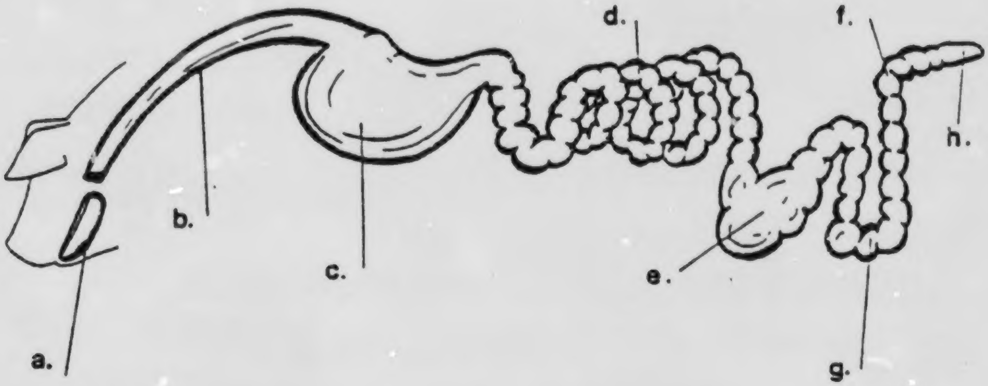
ANIMAL DIGESTION

TEST

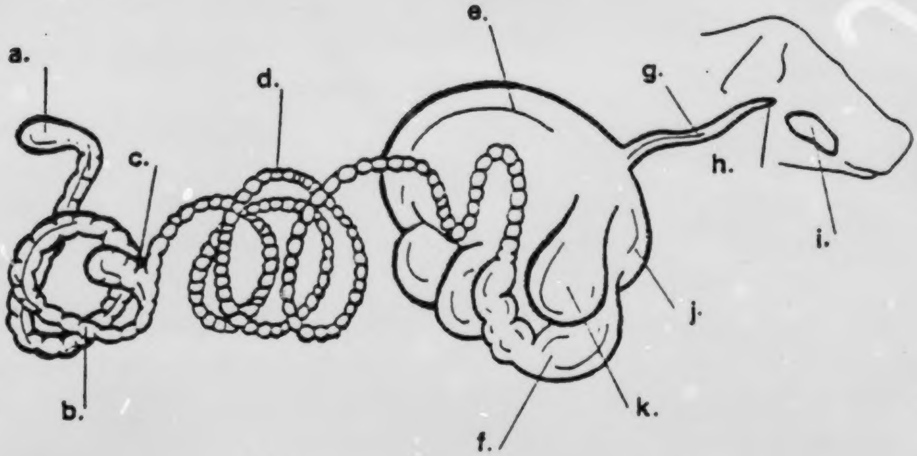
1. Define the following terms:
    a. Digestion -
    b. Mastication -
    c. Hormones -
    d. Feces -
    e. Metabolism -

2. Identify the parts of the following drawings.

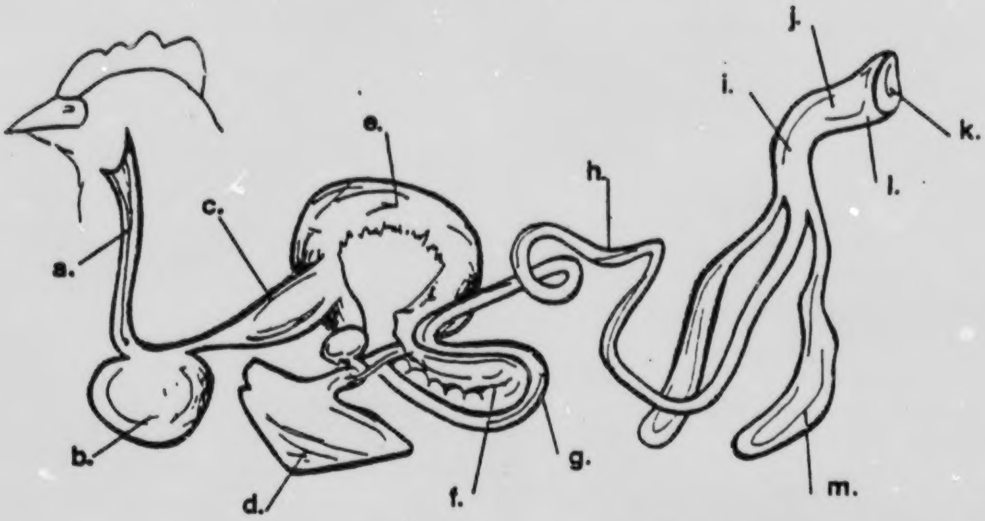
a.



b.


e.
a.
d.
g.
c.
h.
i.
j.
k.
b.
f.

C.



a.
b.
c.
d.
e.
f.
g.
h.
i.
j.
k.
l.
m.

Answers for question 2:

A. a. ____________ e. ____________

b. ____________ f. ____________

c. ____________ g. ____________

d. ____________ h. ____________

B. a. ____________ g. ____________

b. ____________ h. ____________

c. ____________ i. ____________

d. ____________ j. ____________

e. ____________ k. ____________

f. ____________

C. a. ____________ h. ____________

b. ____________ i. ____________

c. ____________ j. ____________

d. ____________ k. ____________

e. ____________ l. ____________

f. ____________ m. ____________

g. ____________

3. What is the difference between a simple and a compound stomach?

4. In the list below, place an "S" by the simple stomach and an "R" by the ruminant animal.

_____a. Horse
_____b. Cow
_____c. Pig
_____d. Sheep
_____e. Man
_____f. Goat
_____g. Chicken
_____h. Dog
_____i. Rabbit

5. What are three functions of hormones in the digestive process?

a.
b.
c.

6. Discuss in writing two digestive processes that take place in the mouth.

7. Name five glands that aid in the breakdown of feeds in digestion.

a.
b.
c.
d.
e.

8. a. Chewing and grinding of feed is considered to be _____________ digestion.

b. Mixing of feed with saliva and juices is considered to be _______________ digestion.

ANIMAL DIGESTION

ANSWERS TO TEST

1. a. The process of preparing the food ingredients for passage into the blood stream.
   b. The grinding or chewing of feed to aid in digestion.
   c. The internal body secretions that regulate various body processes.
   d. The manure or the undigested material and wastes which are expelled at the end of the digestive tube.
   e. The chemical change which the food undergoes within the body.

2. A. Pig
      a. Pharynx
      b. Esophagus
      c. Stomach
      d. Small intestine
      e. Caecum
      f. Colon
      g. Large intestine
      h. Rectum
   B. Cow
      a. Anus
      b. Colon or large intestine
      c. Caecum
      d. Small intestine
      e. Rumen
      f. Abomasum
      g. Esophagus
      h. Pharynx
      i. Salivary ducts
      j. Reticulum
      k. Omasum
   C. Chicken
      a. Esophagus
      b. Crop
      c. Proventriculus
      d. Liver
      e. Gizzard
      f. Pancreas
      g. Duodenum
      h. Small intestine
      i. Large intestine
      j. Rectum
      k. Vent
      l. Cloaca
      m. Cecum

3. A simple stomach has one compartment, and a compound stomach has four compartments.

4. a. S
b. R
c. S
d. R
e. S
f. R
g. S
h. S
i. S

5. Any three of the following:
a. Digestion
b. Metabolism
c. Milk secretion
d. Let-down of milk
e. Development of sexual characteristics

6. a. Chewing or grinding of feed
b. Secretion of saliva

7. a. Thyroid
b. Parathyroid
c. Pituitary
d. Adrenal
e. Pancreas

8. a. Mechanical
b. Chemical

MANUFACTURING FEEDS IN THE FEED MILL
UNIT I

TERMINAL OBJECTIVES

After completion of this unit, the student should be familiar with the terminology used in feed manufacturing and have an appreciation of the complexities involved in feed plant operation. The student should be able to understand process flow diagrams of feed manufacturing plants and use such flow diagrams to determine general processing capabilities of feed mills. The student also should be able to trace mill operations or material flow from receiving of grain and ingredients to grain processing to feed mixing to finished feed delivery.

The student should also be familiar with the general safety precautions necessary in feed mills and appreciate the contribution of mill cleanliness to safe and efficient feed mill operation.

SPECIFICE OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with manufacturing feeds in the feed mill.
2. Identify the major components of a feed manufacturing plant.
3. List the six major operations of a feed manufacturing plant.
4. List the forms of feed.
5. List the kinds of feeds.
6. Discuss the procedures used for manufacturing feeds in the feed mill.
7. List the general safety precautions that should be observed while working in a feed mill.

MANUFACTURING FEEDS IN THE FEED MILL
UNIT I

SUGGESTED ACTIVITIES

I. Instructor

- A. Provide students with objective sheet.
- B. Provide students with information sheet.
- C. Prepare feed manufacturing plant slide program.
- D. Make transparencies.
- E. Discuss terminal and specific objectives.
- F. Discuss information sheet.
- G. Give test.

II. Student

- A. Read objectives.
- B. Study information sheet.
- C. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheet
- C. Supplemental Information Sheet
- D. Transparency masters
  - TM 1 - Components of a Feed Manufacturing Plant
  - TM 2 - Major Operations of a Feed Manufacturing Plant
  - TM 3 - Key Characteristics of Formula Feeds
  - TM 4 - Process Flow Diagram of A Feed Manufacturing Plant
- E. Test
- F. Answers to test

II. References:

- A. Good Feed Mixing Practices. Lafayette, Indiana: Cooperative Extension Service, Purdue University. pp. 1-5.
- B. Perry, T.S. Feed Formulation Handbook. Danville, Illinois: The Interstate Printers and Publishers, Inc. 1971 pp. 205-212.

C. Instant Quality Control for Feed Men. Manhattan, Kansas: Cooperative Extension Service, Kansas State University.

D. Feed Manufacturing Problems, Drug Cross Contamination Control and Prevention. Manhattan, Kansas: Cooperative Extension Service, Kansas State University.

E. Feed Manufacturing Problems, Incomplete Mixing and Segregation. Manhattan, Kansas: Cooperative Extension Service, Kansas State University.

F. Prevention of Fire and Dust Explosions in Feed Mills, Flour Mills, Grain Elevators. Manhattan, Kansas: Cooperative Extension Service, Kansas State University.

G. Operator's manuals from manufacturers for the various items of equipment.

MANUFACTURING FEEDS IN THE FEED MILL
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Additive - An ingredient of combination of ingredients added to basic feed mix. Usually used in micro-quantities and requires careful handling and mixing.

B. Aspirating - Removal of chaff, dust, or other light materials by use of air.

C. Base Mix - A supplement with the main protein source (soybean meal, cottonseed meal removed)

D. Blending - To mingle or combine two or more ingredients or feeds.

E. Blocks - Agglomerated feed compressed into a solid mass weighing over two pounds and generally weighing from 30 to 40 pounds.

F. Chopping - Reduced in particle size by cutting with knives or other edged instruments.

G. Commercial Feed - Materials which are distributed for use as feed of for mixing in feed for animals.

H. Complete Feed - A nutritionally adequate feed for animals which is compounded to be fed as the sole ration. It is capable of maintaining life and/or promoting production without any additional substance being consumed except water.

I. Concentrate - A feed used with another to improve the nutritive balance of the total. It is intended to be further diluted and mixed to produce a supplement or a complete feed.

J. Crackling - Particle size reduced by combined breaking and cruching action.

K. Crimping - Rolled by use of corrugated rollers.

L. Crumbles - Pelleted feed reduced to granular form.

M. Flakes - An ingredient rolled or cut into flat pieces with or without prior steam conditioning.

N. Formula Feed - Two or more ingredients proportioned, mixed, and processed according to specifications.

O. Grain - Seed from cereal plants.

P. Grinding - Reduced in particle size by impact, shearing, or attrition.

Q. Ingredient - Each of the constituent materials making up a commercial feed.

R. Liquid Feed - Animal feed where all ingredients are suspended in liquid form.

S. Meal - An ingredient which has been ground or reduced in particle size.

T. Micro-Ingredients - Vitamins, minerals, antibiotics, drugs, and other materials normally required and measured in small units.

U. Mixing - To combine by agitation two or more materials to specific degree of dispersion.

V. Pellets - Agglomerated feed formed by compacting and forcing through die openings by a mechanical process.

W. Premix - A uniform mixture of one or more micro-ingredients with diluent and/or carrier.

X. Premixing - The preliminary mixing of ingredients with diluents and/or carriers.

Y. Rolling - Having changed the shape and/or size of particles by compressing between rollers.

Z. Scalping - Having removed larger material by screening.

AA. Supplement - A feed used with another to improve the nutritive balance or performance of the total mixture to be: (1. Fed undiluted as a supplement to other feeds; or 2. Offered free choice with other parts of the ration separately available; or 3. Further diluted and mixed to produce a complete feed.)

BB. Trace Minerals - Mineral nutrients required by animals in micro amounts only.

II. Major components of a feed manufacturing plant (TM 1)

A. Truck Dumps

B. Drag Feeders

C. Hammermill

D. Roller Mill

E. Whole Grain Bins

F. Distributors

G. Concentrate Bins

H. Processed Ingredient Bins

I. Hopper Scale

J. Horizonal Mixer

K. Surge Hopper

L. Drag Hopper

M. Sack Off Bins

N. Molasses Mash Bins

O. Sack Off Scale
P. Molasses Blender
Q. Molasses Tank
R. Bulk Load Out Bins
T. Truck Scales

III. Major operations of a feed manufacturing plant (TM 2)
A. Receiving
B. Processing
C. Mixing
D. Packing
E. Pelleting
F. Loading

IV. Forms of feed
A. Blocks
B. Crumbles
C. Flakes
D. Liquids
E. Meal
F. Pellets

V. Kinds of feeds (TM 3)
A. Complete
B. Supplement

(NOTE: A supplement may be fed undiluted as a supplement to other feeds, offered free choice with other parts of the ration separately, or further diluted and mixed to produce a complete feed.)

C C. Base mix
D. Pre-mix

VI. Feed manufacturing procedures (TM 4)
A. Receive all bulk grains, bulk ingredients, bagged ingredients, liquids, premixes and feed additives into designated bins, tanks, or warehouse. A receiving report should be completed for each receipt, indicating type of material received, amount received and storage location of item received.
B. Process the various grains into the proper form (such as

grinding, rolling, crimping grain.)

C. Accumulate the grain and ingredients in the scale hopper in the order and amounts specified by the production formula.

D. Weighed ingredients are transferred from the hopper scale to the mixer.

E. Hand weighed items (premixes, feed additives and sacked ingredients) are weighed and added to the mixer as specified by the production formula.

F. Liquids are added to the mixer as specified by production formula.

G. Mixing time begins after last item is added to the mixer. Mixing time should be determined by actual mixing tests. Mixing times for each ration should be listed on the production schedule.

H. Transfer the mixed feed from the mixer to bulk bins, pelleting bins or sacking bins as specified by the production schedule.

I. Transfer finished feed from pelleting bins for pelleting as designated on the production schedule.

J. Transfer finished feed from sacking bins for sacking as specified on the production schedule.

(NOTE: The proper label should be attached to the bag and the bagged feed transferred to the warehouse on delivery vehicle.)

K. Clean the equipment.

(NOTE: Dust and excessive grease or lubricants should be removed from equipment. Use compressed air only when mill is not operating.)

L. Clean the area around the equipment.

(NOTE: Sweep all floor areas and remove trash from the work area.)

VII. General safety precautions (See Supplemental Information Sheet)

A. No smoking is permitted in the feed mill.

B. Issue special permits before allowing any welding or cutting.

C. Use only grounded or double insulated electrical tools.

D. Use only drop lights approved for dust hazard areas.

E. Do not wear loose fitting clothing around operation equipment.

F. Wear protective head gear (hard hats or bump caps) in hazardous areas.

G. Place protective guards to shield exposed gears, drive belts, chains, sprockets, etc. equipment before operating equipment.

H. Shut down equipment before conducting maintenance, cleaning or adjustments that are hazardous during equipment operation.

I. Consult equipment operating manuals for special operating instructions designed to insure safety.

SUPPLEMENTAL INFORMATION SHEET

INSPECTION REPORT

Company Name ______________________

Location ______________________

Yes or No

FIRE PROTECTION EQUIPMENT

1. First aid extinguishers
   - (a) Clean in workable condition . . . .
   - (b) Checked or refilled & tagged . . . . .
   - (c) Protected against freezing . . . .
   - (d) Properly hung and marked. . . . .
2. Standpipe & hose
   - (a) Those properly hung . . . .
   - (b) Properly marked. . . . .
3. Sprinkler Protection
   - (a) Valves open . . . .
   - (b) Air pressure at proper level . . . .
4. Fire Prevention Signs
   - (a) "No Smoking" signs posted . . . .
   - (b) Is smoking rule strictly enforced . . . .
   - (c) "In Case of Fire" signs posted . . . .
   - (d) Arson Reward signs posted . . . .
5. Fire Doors
   - (a) In good workable condition. . . . .
   - (b) Free from obstructions . . . .
6. Local Fire Alarm
   - (a) In good working order . . . .
   - (b) Manual stations plainly marked . . . . .

REMARKS ______________________

MAINTENANCE

1. Building
   - (a) Any broken windows . . . .
   - (b) Stairs in good repair . . . .
   - (c) Manlift or elevator in good repair. . . .
2. Machinery
   - (a) Bearings clean & well oiled . . . .
   - (b) Any running hot . . . .
   - (c) Belt drives in order . . . .
3. Electrical Equipment
   - (a) Motors running hot . . . .
   - (b) Controllers running hot . . . .

REMARKS ______________________

Yes or No

HOUSEKEEPING

1. Inside Building
   - (a) Floors free of excess litter . . . . . .
   - (b) Any spouts or conveyors leaking. . .
   - (c) Dust control system efficient . . . .
   - (d) Equipment free of dust . . . .
2. Outside Building
   - (a) Areas surrounding free of litter. . . .
   - (b) Premises free of weeds near building. . . . .

REMARKS ______________________

LIGHTING SYSTEM

1. Overcurrent protection
   - (a) Any fuses bridged or relays wired . .
   - (b) Fuse cabinet in order . . . .
   - (c) All lighting circuits fused at 15 amps . . . .
2. Lighting Fixtures
   - (a) All bulbs equipped with dust tight globes and fixtures . . . .
   - (b) Any open bulbs over 40 watts . . . .
3. Portable Equipment
   - (a) Portable extension lights equipped with dust tight globes and guards . .
   - (b) Cords in good condition . . . .

REMARKS ______________________

HEAT AND POWER

1. Heating Plant or boiler
   - (a) In good working order . . . .
   - (b) Properly protected from combustible.
   - (c) Free from rubbish in area . . . .
2. Chimney and Stovepipe
   - (a) Proper clearances . . . .
   - (b) In good condition . . . .

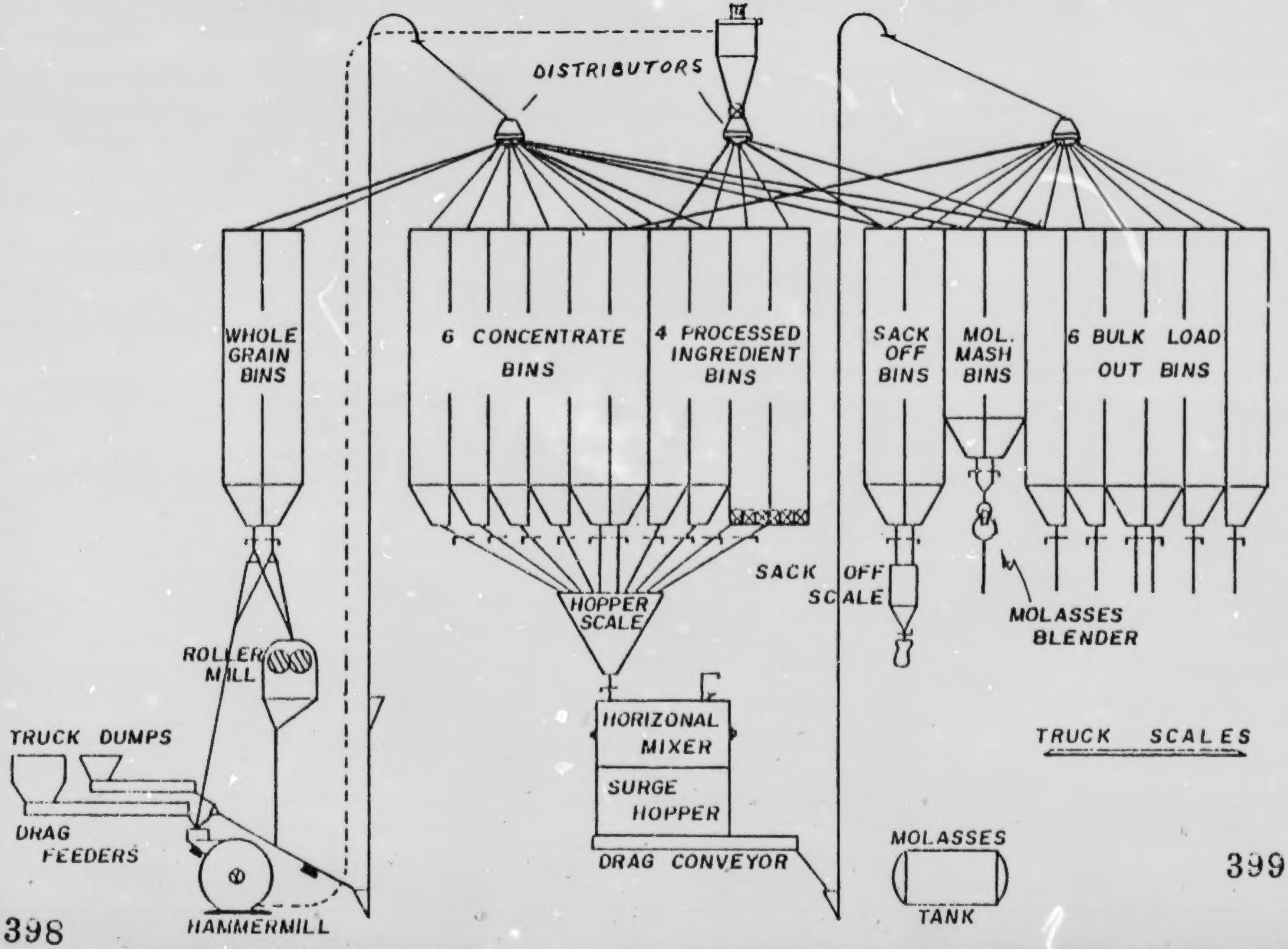
REMARKS ______________________

FEED STORAGE

1. Bulk
   - (a) Bulk piles unmoved for over 60 days . . . .
   - (b) Has heat been checked with probe thermometer . . . .
2. Bagged
   - (a) Piles over 6' high stacked on skids. . . . .
   - (b) Any rows longer than 16 feet . . . . .
   - (c) Are exits clear . . . .

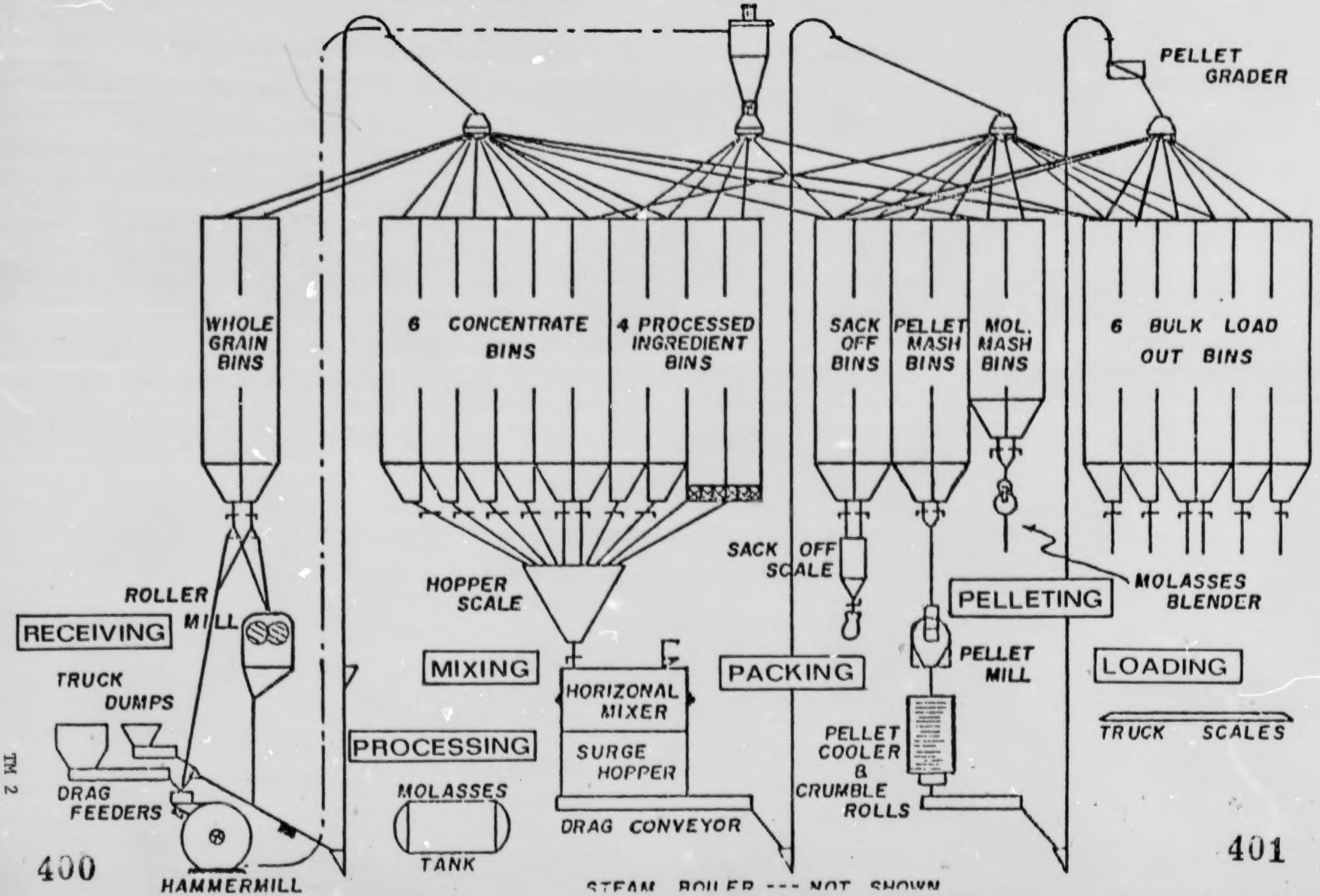
REMARKS ______________________

COMPONENTS OF A FEED MANUFACTURING PLANT


DISTRIBUTORS
WHOLE GRAIN BINS
6 CONCENTRATE BINS
4 PROCESSED INGREDIENT BINS
SACK OFF BINS
MOL. MASH BINS
6 BULK LOAD OUT BINS
HOPPER SCALE
SACK OFF SCALE
MOLASSES BLENDER
ROLLER MILL
TRUCK DUMPS
DRAG FEEDERS
HAMMERMILL
HORIZONAL MIXER
SURGE HOPPER
DRAG CONVEYOR
TRUCK SCALES
MOLASSES TANK

TM 1

MAJOR OPERATIONS OF A FEED MANUFACTURING PLANT


PELLET GRADER
WHOLE GRAIN BINS
6 CONCENTRATE BINS
4 PROCESSED INGREDIENT BINS
SACK OFF BINS
PELLET MASH BINS
MOL. MASH BINS
6 BULK LOAD OUT BINS
SACK OFF SCALE
HOPPER SCALE
ROLLER MILL
RECEIVING
MOLASSES BLENDER
PELLETING
TRUCK DUMPS
MIXING
PACKING
PELLET MILL
LOADING
HORIZONAL MIXER
SURGE HOPPER
PROCESSING
PELLET COOLER & CRUMBLE ROLLS
TRUCK SCALES
DRAG FEEDERS
MOLASSES TANK
DRAG CONVEYOR
HAMMERMILL
STEAM BOILER --- NOT SHOWN

TM 2

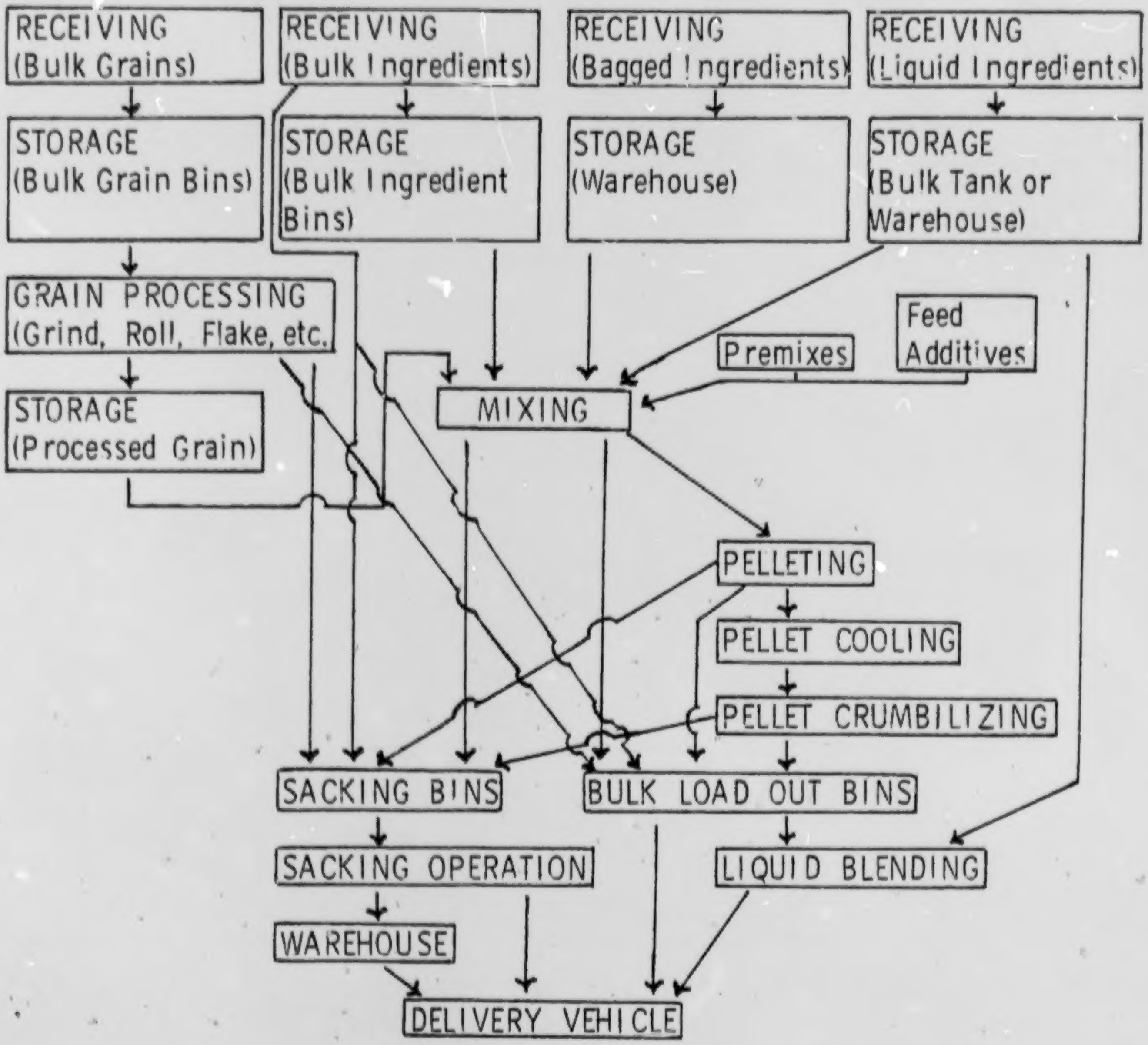
KEY CHARACTERISTICS OF FORMULA FEEDS

KIND OF FEED	PROTEIN CONTENT	AMOUNT USED IN SECONDARY MFG. TO PRODUCE 2,000 LB.	MUST BE DILUTED FURTHER BEFORE FEEDING
Complete	10-30%	------	No
Supplement	30-70%	200-1000 lb.	No
Base mix	5-20%	50-300 lb.	Yes
Pre-mix [1]	----	5-100 lb.	Yes

---

[1] May be used to make a base-mix or supplement, depending on manufacturing process.

PROCESS FLOW DIAGRAM
OF A
FEED MANUFACTURING PLANT


RECEIVING (Bulk Grains)
RECEIVING (Bulk Ingredients)
RECEIVING (Bagged Ingredients)
RECEIVING (Liquid Ingredients)
STORAGE (Bulk Grain Bins)
STORAGE (Bulk Ingredient Bins)
STORAGE (Warehouse)
STORAGE (Bulk Tank or Warehouse)
GRAIN PROCESSING (Grind, Roll, Flake, etc.
Feed Additives
Premixes
STORAGE (Processed Grain)
MIXING
PELLETING
PELLET COOLING
PELLET CRUMBILIZING
SACKING BINS
BULK LOAD OUT BINS
SACKING OPERATION
LIQUID BLENDING
WAREHOUSE
DELIVERY VEHICLE

MANUFACTURING FEEDS IN THE FEED MILL

TEST

1. Match the terms associated with manufacturing feeds in the feed mill with their correct definition.

   a. Reduced in particle size by impact, shearing, or attrition.

   b. Particle size reduced by combined breaking and crushing action.

   c. Agglomerated feed formed by compacting and forcing through die openings by mechanical process.

   d. Having changed the shape and/or size of particles by compressing between rollers.

   e. Removal of chaff, dust, or other light materials by use of air.

   f. A uniform mixture of one or more micro-ingredients with diluent and/or carrier.

   g. Mineral nutrients required by animals in micro amounts only.

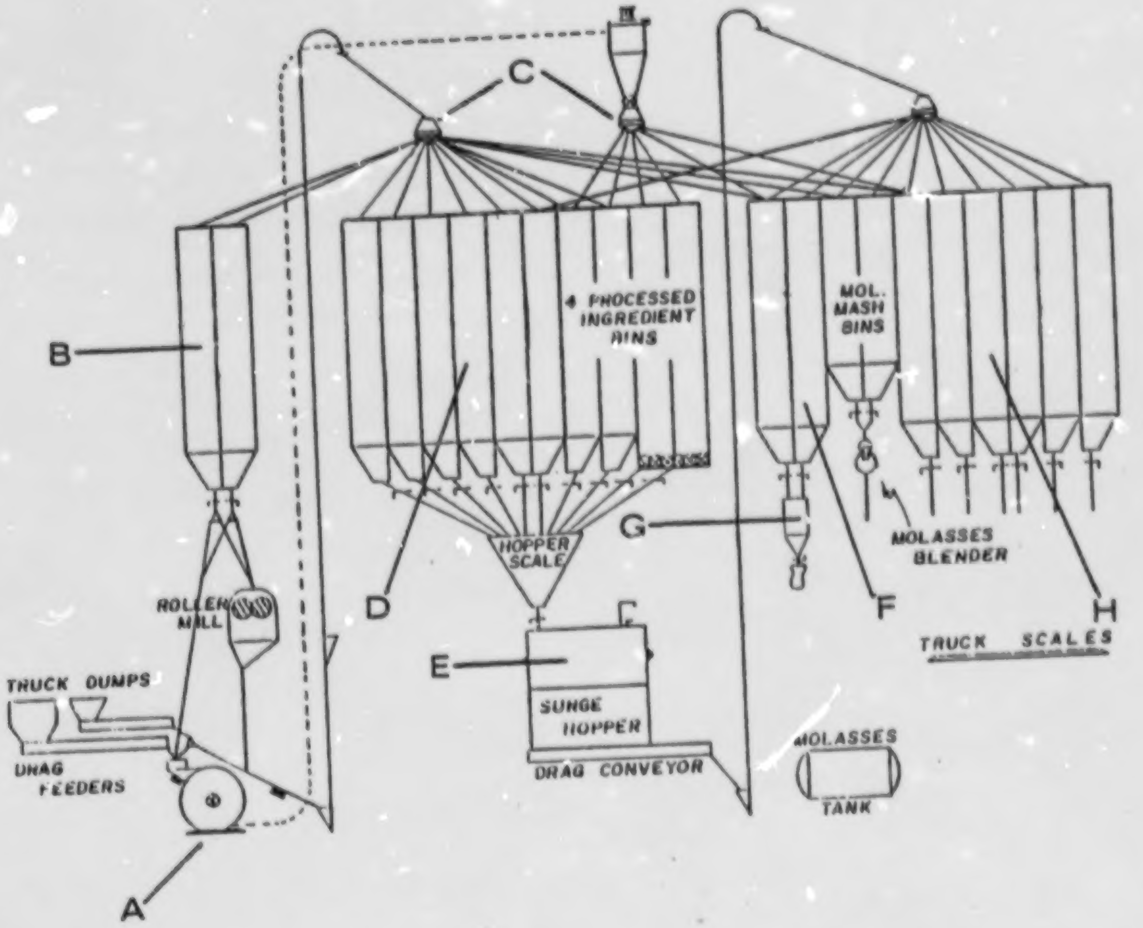
   h. Pelleted feed reduced to granular form.

   i. To combine by agitation two or more materials to specific degree of dispersion.

   j. Seed from cereal plants.

   1. Aspirating
   2. Cracking
   3. Crumbles
   4. Grain
   5. Grinding
   6. Mixing
   7. Pellets
   8. Premix
   9. Rolling
   10. Trace Minerals

2. Identify the major components of a feed manufacturing plant.


C
B
4 PROCESSED INGREDIENT BINS
MOL. MASH BINS
HOPPER SCALE
G
MOLASSES BLENDER
ROLLER MILL
D
F
H
TRUCK SCALES
E
TRUCK DUMPS
SURGE HOPPER
DRAG FEEDERS
DRAG CONVEYOR
MOLASSES TANK
A

A. ________________________ E. ________________________

B. ________________________ F. ________________________

C. ________________________ G. ________________________

D. ________________________ H. ________________________

3. List the six major operations of a feed manufacturing plant.

a.
b.
c.
d.
e.
f.

4. List the six forms of feed.

a.
b.
c.
d.
e.
f.

5. List the four kinds of feed.

a.
b.
c.
d.

6. Discribe the procedures used for manufacturing feeds in the feed mill.

7. List six general safety precautions that should be observed while working in a feed mill.

a.
b.
c.
d.
e.

MANUFACTURING FEEDS IN THE FEED MILL

ANSWERS TO TEST

1. a. 5
   b. 2
   c. 7
   d. 9
   e. 1
   f. 8
   g. 10
   h. 3
   i. 6
   j. 4

2. a. Hammermill
   b. Whole grain bins
   c. Distributors
   d. Concentrate bins
   e. Horizontal mixer
   f. Sack off bins
   g. Sack off scale
   h. Bulk load out bins

3. a. Receiving
   b. Processing
   c. Mixing
   d. Packing
   e. Pelleting
   f. Loading

4. a. Blocks
   b. Crumbles
   c. Flakes
   d. Liquids
   e. Meal
   f. Pellets

5. a. Complete
   b. Supplement
   c. Base mix
   d. Premix

6. Discussion should include the following:
   a. Receive all bulk grains, bulk ingredients, bagged ingredients liquids, premixes and feed additives into designated bins, tanks, or warehouse.
   b. Process the various grains into the proper form.
   c. Accumulate the grain and ingredients in the scale hopper in the order and amounts specified by the production formula.
   d. Weighed ingredients are transferred from the hopper scale to the mixer.
   e. Hand weighed items are weighed and added to the mixer as specified by the production formula.
   f. Liquids are added to the mixer as specified by production formula.
   g. Mixing times for each ration should be listed on the production schedule.
   h. Transfer the mixed feed from the mixer to bulk bins, pelleting bins or sacking bins.
   i. Transfer finished feed from pelleting bins for pelleting.
   j. Transfer finished feed from sacking bins for sacking.
   k. Clean the equipment.
   l. Clean the area around the equipment.

7. Any six of the following:
   a. No smoking is permitted in the feed mill.
   b. Issue special permits before allowing any welding or cutting.
   c. Use only grounded or double insulated electrical tools.
   d. Use only drop lights approved for dust hazard areas.
   e. Do not wear loose fitting clothing around operation equipment.
   f. Wear protective head gear in hazardous areas.
   g. Place protective guards to shield exposed gears, drive belts, chains, sprockets, etc. equipment before operating equipment.
   h. Shut down equipment before conducting maintenance, cleaning, or adjustments that are hazardous during equipment operation.
   i. Consult equipmnet operating manuals for special operating instructions designed to insure safety.

SUPERVISED TRAINING PROGRAMS - FARM BUSINESS MANAGEMENT

BUSINESS PROCEUDRES AND RECORDS
UNIT II

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to match the terms for sales procedures and records to their definitions, describe why sales tickets are important, distinguish between customer and sales managers sales receipt imformation, make change, properly cash a check and prepare a sales ticket. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms to the definitions of sales procedures and records.
2. Discuss the importance of the sales ticket.
3. Distinguish between customers and sales managers sales receipt information.
4. List three jobs that are essential to maintain control of the recording process each day.
5. Describe how you make chnage.
6. Describe how you properly cash a check.
7. Select from a list how to handle a sales ticket after the transaction.
8. Describe how to properly fill out a credit card sales draft.
9. Describe when to fill out returns and exchanges for credit cards.
10. Describe how to fill out telephone and mail order credit card sales drafts.
11. List when to obtain sales authorization for credit cards.
12. Describe how to obtain authorization.
13. Describe how to deposit credit card sales drafts.
14. Demonstrate how to prepare a sales ticket.
15. Demonstrate how to prepare a sales ticket using discounts.

BUSINESS PROCEDURES AND RECORDS
UNIT II

SUGGESTED ACTIVITIES

Instructor:

1. Provide student with objective sheet
2. Provide student with information and assignment sheets
3. Discuss terminal and specific objectives
4. Discuss information and assignment sheets
5. Give test

Students:

1. Read objective sheet
2. Study information sheet
3. Complete assignment sheets
4. Take test

INSTRUCTIONAL MATERIALS

Included in this unit:

1. Objectives
2. Information sheet
3. Transparency masters

   TM 1--Good Sales Ticket
   TM 2--Poor Ticket
   TM 3--Sales Ticket With Discount

4. Assignment sheets

   Assignment sheet #1--Why Sales Tickets are Important
   Assignment sheet #2--Complete a Sales Ticket
   Assignment sheet #3--Prepare a Sales Ticket With Discounts

5. Answers to assignment sheets

6. Test

7. Answers to test

References:

1. Business Procedures and Records. Agricultural Education Services, Ohio State University, 1971.

2. Bank Americard Transactions. Commerce Band of Kansas City, Kansas City, MO, 1976.

BUSINESS PROCEDURES AND RECORDS
UNIT II

INFORMATION SHEET

I. Terms and definitions

  A. Cash discount--Discount given for paying for merchandise in cash, usually no larger than two or three percent

  (NOTE: This discount is figured after other discounts have been applied.)

  B. Quantity discount--Discount given for buying large volumes of merchandise

  (NOTE: This discount is usually for feed, fertilizer of seed.)

  C. Bulk discount--Discount given for buying in bulk

  D. Early season discount--Discount for buying merchandise before season

II. Importance of the sales ticket

  A. Permanent record of each transaction

  B. First record of the sale of merchandise from the company

  C. Heart of the accounting or bookkeeping system

  D. Record of the customer's expenses for the year

III. Sale receipt information

  A. Store manager

    1. Amount of sale

    (NOTE: The total of the receipts in used to make a daily cash balance.)

    2. Amount of merchandise sold

    (NOTE: This is used for inventory records.)

    3. Amount of sales tax collected

    (NOTE: This is used for sales tax reports.)

    4. Information needed to charge purchases to customer's accounts

    (NOTE: This is the beginning of the bookkeeping system.)

    5. Permanent record of sales

    (NOTE: A copy of all tickets are filed.)

B. Customer

1. A record of his expenses during the year

   (NOTE: These need to be kept for income tax purposes.)

2. Record in cases of disputed accounts

   (NOTE: These slips will show all purchases and payments.)

3. Record in case of need to return merchandise

IV. Jobs that maintain control of the recording process each day

A. Total sales tickets for each day

B. Subtotal in ledger each day

C. Change the balances of customer's accounts receivable

V. Correct way to make change

A. State the amount given to you by the customer and the amount of the sale

   Example: That is $5.85 out of $10.00

B. Place the amount received on the cash register

C. Properly ring up the sale

D. Starting with the amount of the sale, add up the change to the amount received from the customer

   (NOTE: Use the least amount of coins and bills possible.)

E. Give receipt to customer and add back change to customer

   Example: Item is $5.85 your change is $4.15

F. Place money received into the proper place in the register drawer

VI. Proper way to cash a check

A. Check the date

B. Check the amount in figures with the written amount

C. Inspect the signature of the person who signed the check

D. Check to whom the check is made payable

E. If the check is not personalized, secure the address of the person cashing the check

F. Ask the person writing the check for identification

G. Call the manager if there is some question about the check or if store policy requires that the manager approve each check

H. Initial the check

I. If the check is for the full amount of the order and is approved, treat it as a cash sale

J. Endorse the check immediately either by stamp or by placing it on the cash register printing table

VII. Handling of a sales ticket

(Note: The sales tickets are generally made in more than one copy. There is a purpose for each copy.)

A. The original (first copy) is filed by the company as a permanent record of sales and all other transactions

B. One carbon copy is the "customer copy" which he either receives when he makes the purchase or it is sent to him at the end of the month with a monthly statement

C. One carbon copy may be a delivery copy to go along with the merchandise in case it is delivered

D. One carbon copy may be filed as a patronage record for members of a cooperative company

VIII. Filling out a credit card sales draft

A. Check charge card for valid expiration date

B. Compare card number with CURRENT WARNING CARDS

C. Enter the date, description of merchandise or service, sales tax and total

D. Enter authorization number

E. Place card face up in imprinter

F. Place sales draft face up in imprinter over card

G. Imprint by firmly moving imprinter handle completely across sales draft and returning to original position

H. Check for clear impression on last copies, then present sales

I. Compare signature on sales draft with signature on credit card

J. If any irregularities are present, call authorization center

IX. Fill out returns and exchanges for credit cards

A. Return of merchandise for credit without exchange: prepare credit voucher for full amount of return, including tax

(NOTE: No cash refunds are permitted.)

B. Even exchange of merchandise: there is no need to prepare a new sales draft

C. Exchange of merchandise if the exchange is not even: prepare a credit/refund draft for the full amount

(NOTE: Then prepare a new sales draft for the entire amount of the new purchase. Be sure the customer receives a copy of both the credit/refund draft and the new sale draft.)

X. Filling out a telephone and mail order credit card sales draft

A. Fill out sales draft same as without charge card, including cardholder account number and expiration date

B. Initial and identify sale as (TO) telephone order or (MO) mail order on signature line

C. For all telephone and mail orders over $50.00, follow normal authorization procedure

D. Sales draft should be signed when merchandise is delivered if at all possible

E. Customer must receive cardholder copy of sales draft

XI. Sales authorization for credit cards

A. If the amount of sale is greater than your floor limit

B. When a charge card number appears on a Hot Card

C. On a no-card or no-imprint in-store transaction

D. On all telephone and mail orders over $50.00

E. In the case of banks, on all cash advances

F. When individual other than person whose signature appears on card is using the card

(NOTE: Authorization should be obtained whenever you are suspicious of the person presenting the card.)

XII. Credit card authorization

A. Call the authorization center--The phone number is on the sticker on your telephone

(NOTE: Most card authorization centers provides 24 hour authorization service seven days a week.)

B. Tell the authorization operator whether the transaction is a merchandise sale (or cash advance - banks only), the cardholder account number, the last six digits of your merchant identification number and amount of the sale

C. If approval is granted, the authorization operator will give you the authorization number

(NOTE: This MUST be written in the appropriate space on the sales draft.)

D. If approval is not granted by the authorization center, do not complete the sale credit card transaction

E. If you are requested to honor an over-floor limit sale without authorization, you honor the sale at your own risk

(NOTE: If the sale is not authorized, cooperation will be extended by giving you information, if available, relative to the customer such as name and last known address.)

XIII. Depositing credit card sales drafts

(NOTE: When preparing your deposit, separate your sales and credits. Then count the sales drafts and run an adding machine tape on each group.)

A. Imprint your merchant name and number on the merchant summary form using your merchant identification card in the imprinter

B. Complete the merchant summary form using spaces provided

    1. Total number of sales drafts
    2. Total dollar volume of sales drafts
    3. Total number of credit vouchers
    4. Total dollar volume of credit vouchers
    5. Gross deposit
    6. Signature
    7. Date

C. Separate the merchant summary form copies

(NOTE: Place the second copy (the hard copy) of the summary form, the hard copies of the sales drafts and credit vouchers, and the adding machine tape in an envelope provided. Make sure the summary form can be read through the window in the envelope.)

D. Staple the first copy of the summary form to the outside of the envelope and forward to your bank of deposit

(NOTE: See instructions on the envelope.)

E. Retain third copy for your own records

F. Seal envelope

G. Fill out your regular bank deposit slip, insuring the deposit agrees with the amount shown on the merchant summary form

H. Deliver the deposit to your bank in the usual manner

XIV. Prepare a sales ticket (Transparency 1, 2, and 3)

A. Mark the correct date

B. Write the customer's correct name and address

(NOTE: If partnership, it should be noted as such. The name and address becomes necessary if the purchase becomes a charge account.)

C. Give a complete description of each article sold

1. Quantity and unit should be thought of as one item

Example: 100 lbs., 10 gal.

2. The description should clearly designate the type of merchandise being sold and not merely be a commodity classification

Example: 100# calf manna, not 100# feed. This is necessary for checking price for inventory controls.

3. Show the price per unit on all merchandise

(NOTE: Some sales tickets will have a column heading marked "price." Bill all merchandise at the retail price. If the customer is entitled to a discount because of volume, damage, etc., this amount is then deducted from the retail price.)

4. Extensions must be mathematically accurate and legibly written

D. Make a subtotal of the extension

E. Calculate the sales tax on all taxable items, if any, and enter under the first total

F. Calculate any delivery, mixing, grinding or shelling charges and enter under the sales tax calculations

G. Add the extension column to obtain the grand total charges the sale

H. Check the block on the ticket to indicate the method of payment: cash, check, charge, returned or account

I. If settlement is to be made by check in an amount different from the ticket total, it is well to note the amount of the check on the face of the sales ticket with the calculation of the change to be given

J. Get the signature of the person receiving the merchandise if the settlement is to be other than cash

K. When a customer pays on account, make out a sales ticket and mark what he is paying for

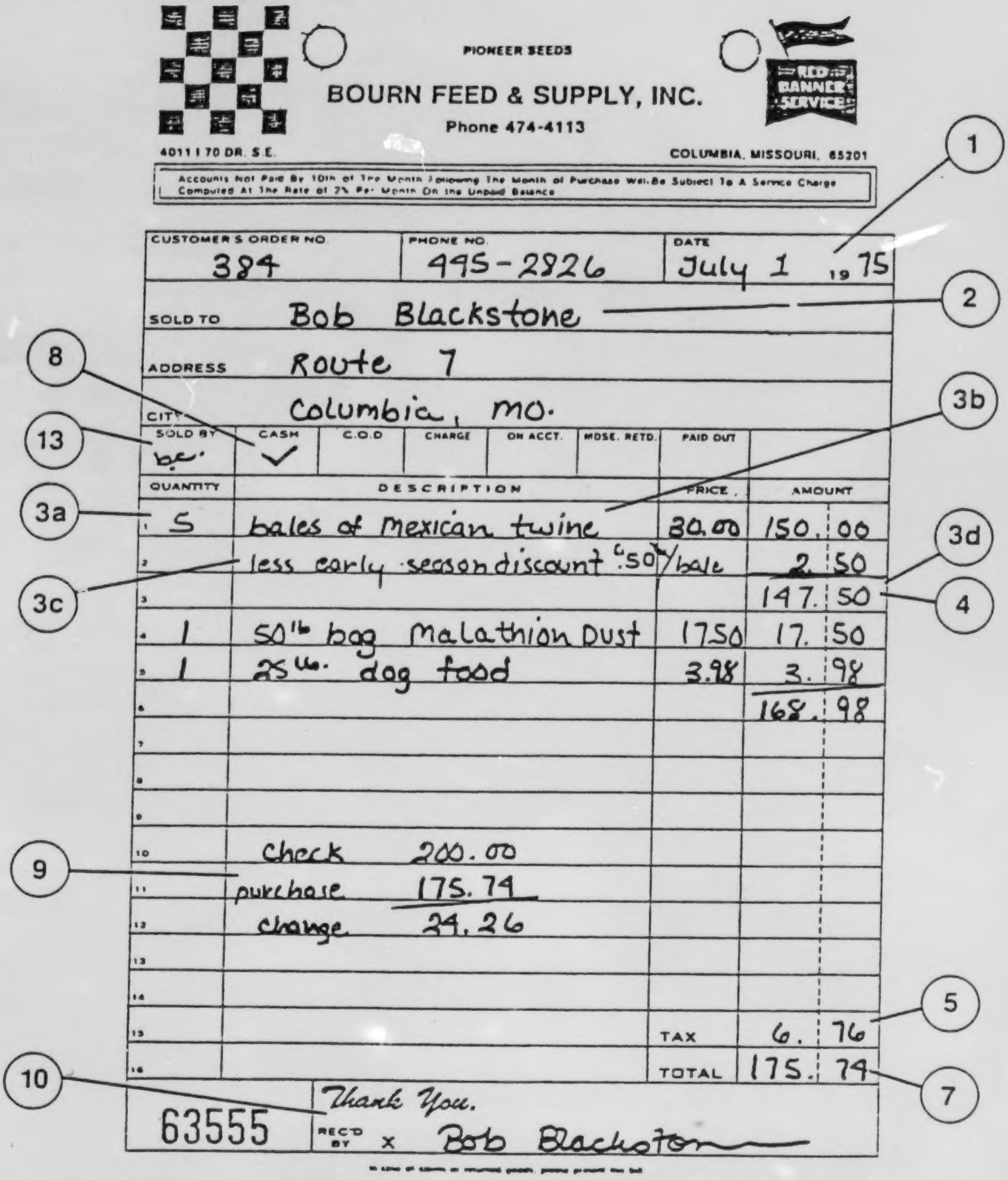
Example: Fertilizer, feed, balance on note, etc.

L. In all cases, if an employee should ruin a ticket for any reason, the word VOID should be written across the front of the ticket and the original placed with the other tickets

(NOTE: Sales tickets are numbered consecutively and each one must be accounted for at the end of the day's business.)

M. Salesman initials the ticket in the appropriate block

GOOD SALES TICKET


1
2
8
3b
13
3a
3d
3c
4
9
5
10
7

PIONEER SEEDS

BOURN FEED & SUPPLY, INC.

Phone 474-4113

4011 I 70 DR. S.E.

COLUMBIA, MISSOURI, 65201

Accounts Not Paid By 10th of The Month Following The Month of Purchase Will Be Subject To A Service Charge Computed At The Rate of 2% Per Month On the Unpaid Balance

CUSTOMER'S ORDER NO. 384

PHONE NO. 495-2826

DATE July 1 19 75

SOLD TO Bob Blackstone

ADDRESS Route 7

CITY Columbia, MO.

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
bc.	✓					

	QUANTITY	DESCRIPTION	PRICE	AMOUNT
1	5	bales of Mexican twine	30.00	150.00
2		less early season discount ¢50¢/bale		2.50
3				147.50
4	1	50lb bag Malathion Dust	17.50	17.50
5	1	25lb. dog food	3.98	3.98
6				168.98
7				
8				
9				
10		Check 200.00		
11		purchase 175.74		
12		change 24.26		
13				
14				
15			TAX	6.76
16			TOTAL	175.74

63555

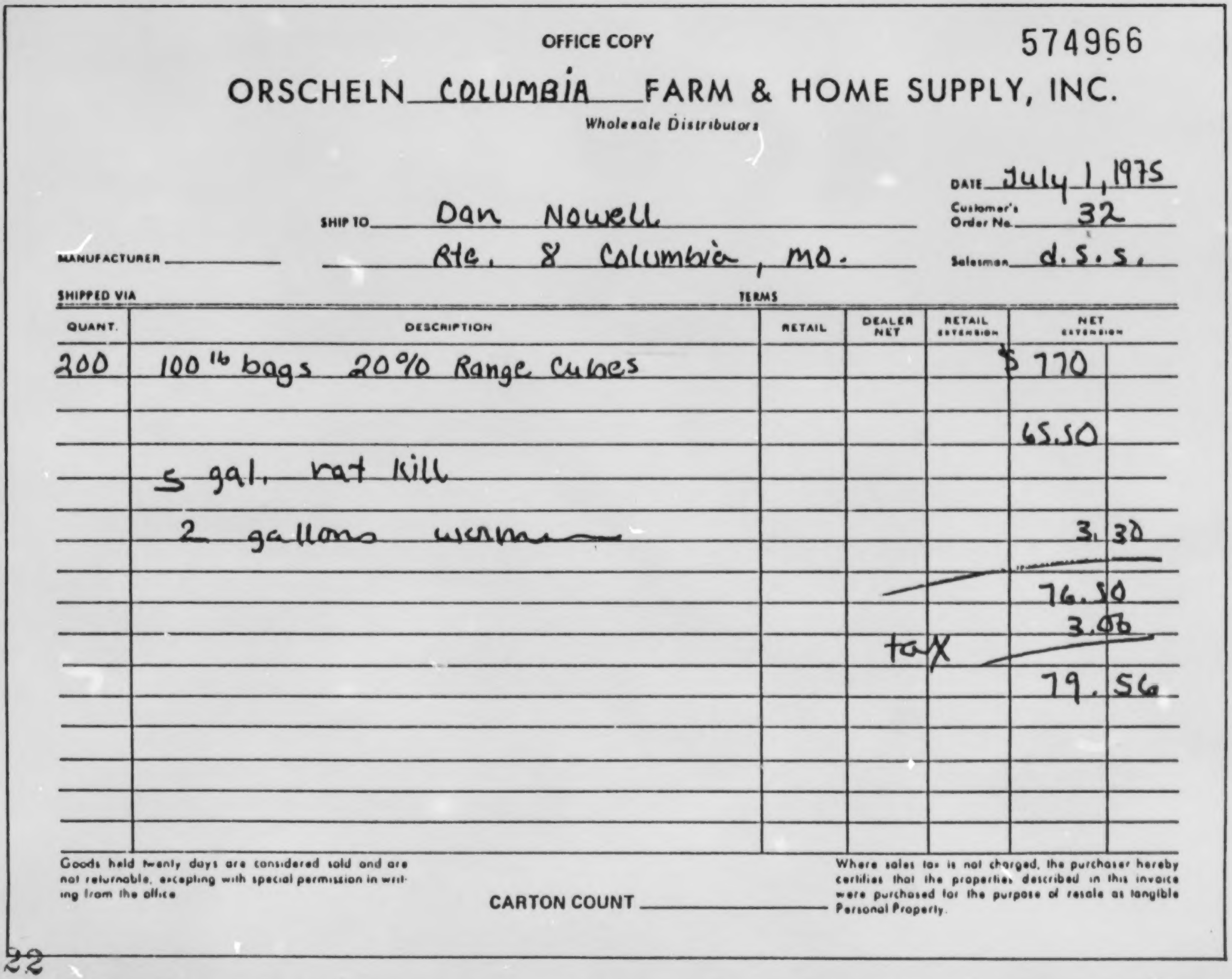
Thank You.

REC'D BY x Bob Blackstone

FORM ES 510-2

©

Copy of Poor Sales Ticket



OFFICE COPY 574966

ORSCHELN COLUMBIA **FARM & HOME SUPPLY, INC.**

Wholesale Distributors

DATE July 1, 1975

SHIP TO Dan Nowell

Rte. 8 Columbia, MO.

Customer's Order No. 32

Salesman d.S.S.

MANUFACTURER

SHIPPED VIA

TERMS

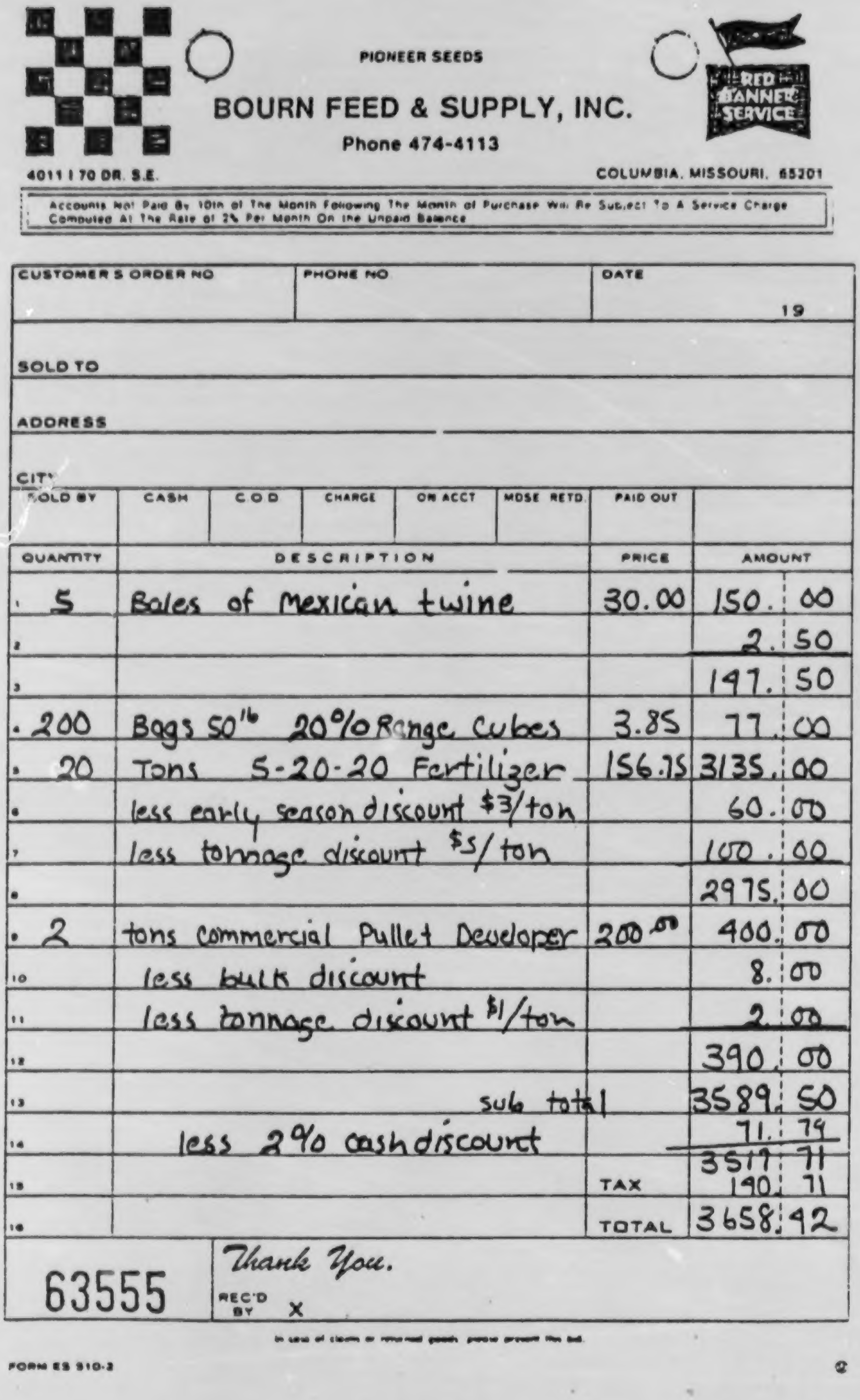
QUANT.	DESCRIPTION	RETAIL	DEALER NET	RETAIL EXTENSION	NET EXTENSION
200	100^{lb} bags 20% Range Cubes				$770
					65.50
	5 gal. rat kill				
	2 gallons wormer				3.30
					76.50
				tax	3.06
					79.56

Goods held twenty days are considered sold and are not returnable, excepting with special permission in writing from the office

CARTON COUNT

Where sales tax is not charged, the purchaser hereby certifies that the properties described in this invoice were purchased for the purpose of resale as tangible Personal Property.

SALES TICKET WITH DISCOUNTS



PIONEER SEEDS

BOURN FEED & SUPPLY, INC.

Phone 474-4113

RED BANNER SERVICE

4011 I 70 DR. S.E.

COLUMBIA, MISSOURI, 65201

Accounts Not Paid By 10th of The Month Following The Month of Purchase Will Be Subject To A Service Charge Computed At The Rate of 2% Per Month On the Unpaid Balance

CUSTOMER'S ORDER NO

PHONE NO

DATE 19

SOLD TO

ADDRESS

CITY

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE RETD.	PAID OUT

QUANTITY	DESCRIPTION	PRICE	AMOUNT
5	Bales of Mexican twine	30.00	150.00
			2.50
			147.50
200	Bags 50lb 20% Range Cubes	3.85	77.00
20	Tons 5-20-20 Fertilizer	156.75	3135.00
	less early season discount $3/ton		60.00
	less tonnage discount $5/ton		100.00
			2975.00
2	tons commercial Pullet Developer	200.00	400.00
	less bulk discount		8.00
	less tonnage discount $1/ton		2.00
			390.00
	sub total		3589.50
	less 2% cash discount		71.79
		TAX	3517.71 190.71
		TOTAL	3658.42

63555

Thank You.

REC'D BY X

FORM ES 310-2

TM 3

BUSINESS PROCEDURES AND RECORDS
UNIT II

ASSIGNMENT SHEET # 1--WHY SALES TICKETS ARE IMPORTANT

Directions: Complete the following problems. These examples illustrate the importance of getting the merchandise properly billed. Every employer will expect his employees to be very careful that this is done.

No sale is complete until the merchandise is properly accounted for on a sales slip. The importance of this may be illustrated by a simple example:

1. Suppose a farmer buys a ton of feed at the local elevator and he is in a hurry so he tells the employee to charge it to his account and he leaves without going to the office. The selling price of this ton of feed is $110. (The actual cost of the feed was $100 per ton and the dealer figured $10 per ton markup.) If the employee forgets to make a slip for this feed and it does not get charged to the farmer's account, how many tons of this same type of feed will have to be sold to make up for the loss of this one ton not being billed?

This may sound like an exaggerated situation, but ask any local dealer if this happens in his business. It may not happen so often with the bigger purchases, but a number of small purchases may add up to as much loss as the one large item.

Let's look at a couple of other examples:

2. Suppose a half-ton of fertilizer that sells for $72 is not billed to the customer. (The markup on this fertilizer is $9 per ton.) How many tons of this same fertilizer will have to be sold to make up for the loss of the half-ton not billed?
3. A florist shop might have the same problem. Suppose a flower arrangement that sells for $20 does not get billed. (The markup is $5 for the arrangement.) How many arrangements must be sold to make up for the loss of the one not being billed?

BUSINESS PROCEDURES AND RECORDS
UNIT II

ASSIGNMENT SHEET # 2--COMPLETE A SALES TICKET

Using the information for preparing a sales ticket as was presented in the information sheet, complete a sales ticket using the following information.

A. Today's date

B. Your teacher's name, address and telephone number

C. Customer order number - 986

D. Type of sale - cash

E. Description and quantity

  1. 300 pounds of corn - $5/cwt.

  2. 500 pounds 4-12-4 fertilizer @$4.60/50 lb.

F. Tax 4 percent

SALES TICKET WORKSHEET

PIONEER SEEDS

BOURN FEED & SUPPLY, INC.

Phone 474-4113

4011 I 70 DR. S.E.

COLUMBIA, MISSOURI, 65201

Accounts Not Paid By 10th of The Month Following The Month of Purchase Will Be Subject To A Service Charge Computed At The Rate of 2% Per Month On the Unpaid Balance

CUSTOMER'S ORDER NO	PHONE NO.	DATE 19

SOLD TO

ADDRESS

CITY

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE. RETD.	PAID OUT	

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15		TAX	
16		TOTAL	

63555

Thank You.

REC'D BY X

In case of claims or returned goods, please present this bill

FORM ES 510-2

BUSINESS PROCEDURES AND RECORDS
UNIT II

ASSIGNMENT SHEET # 3--PREPARE A SALES TICKET WITH DISCOUNT

Directions: Some businesses give discounts on their sales. Using the information presented below, complete three sales tickets including the customer's discount.

Mr. Bob Blackstone raises cattle, swine, and pullets. He sells milo to a local feed mill which uses the milo in their chicken feed. He buys his feed and supplies in Columbia which has a 1¢ sales tax and Jefferson City which has a 2¢ sales tax. Make up sales tickets for the following dates:

Feb. 11	Columbia--Cash Ticket No. 384	
	12 tons of Sow Chow	$220/ton bulk
	200 bags of 20% Range Cubes	$3.85/50 lb. bag
	20 bushels of Alsike Clover	$25/bu.
May 23	Columbia--Charge Ticket No. 1598	
	15 tons of 14-14-14 fertilizer	$147.45/ton
	3 gallons of spray and dip	$12.60/gal.
July 21	Jefferson City--Cash Ticket No. 1700	
	5 gallons Grub Kill	$13.10/gal.
	4 pounds Rat Kill	$1.49/lb.
	5 pounds Fly Bait	$1.20/lb.
	1 gallon Liquid Wormer	$1.65/pt.
	3 quarts Law Weed Killer	$3.30/pt.

Evaluated to the satisfaction of the instructor.

With given information use sales ticket worksheet and complete the different types of discounts.

QUANTITY DISCOUNTS (tonnage)

Fertilizer Discounts:

5 to 10 ton order	$1.00 per ton discount
11 to 15 ton order	3.00 per ton discount
16 tons or over	5.00 per ton discount

Feed Discounts:

1 to 5 ton (plus $4 per ton bulk)	$1.00 per ton discount
6 to 10 ton (plus $6 per ton bulk)	2.00 per ton discount
11 ton or more (plus $8 per ton bulk)	3.00 per ton discount

EARLY SEASON DISCOUNTS

Twine:		Fertilizer:	Seed:
50¢ per bale	December Delivery	$3.00 per ton	$2.00 per bu.
40¢ per bale	January Delivery	2.50 per ton	1.50 per bu.
30¢ per bale	February Delivery	2.00 per ton	1.00 per bu.
20¢ per bale	March Delivery	1.50 per ton	-----------
10¢ per bale	April Delivery	------------	-----------

CASH DISCOUNTS

2% cash discount allowed when payment is made at time of delivery or pickup

Several discount may apply on the same sale. It is possible to use Tonnage, Early Order and Cash Discount on the same purchase

Deduct early season and tonnage discounts before cash discounts

In figuring fractions of a cent, carry forward 1/2¢ or more and drop less than 1/2¢

Evaluated to the satisfaction of the instructor.

ASSIGNMENT SHEET #3

PIONEER SEEDS

BOURN FEED & SUPPLY, INC.

Phone 474-4113

4011 I 70 DR. S.E. COLUMBIA, MISSOURI, 65201

Accounts Not Paid By 10th of The Month Following The Month of Purchase Will Be Subject To A Service Charge Computed At The Rate of 2% Per Month On the Unpaid Balance

CUSTOMER'S ORDER NO	PHONE NO.	DATE 19

SOLD TO

ADDRESS

CITY

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE. RETD.	PAID OUT	

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15		TAX	
16		TOTAL	

63555	*Thank You.* REC'D BY X

In case of claim or returned goods, please present this bill

FORM ES 510-2

ASSIGNMENT SHEET #3

PIONEER SEEDS

BOURN FEED & SUPPLY, INC.

Phone 474-4113

RED BANNER SERVICE

4011 I 70 DR. S.E.

COLUMBIA, MISSOURI, 65201

Accounts Not Paid By 10th of The Month Following The Month of Purchase Will Be Subject To A Service Charge Computed At The Rate of 2% Per Month On the Unpaid Balance

CUSTOMER'S ORDER NO	PHONE NO	DATE
		19

SOLD TO

ADDRESS

CITY

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT	MDSE. RETD.	PAID OUT	

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15		TAX	
16		TOTAL	

63555	*Thank You.* REC'D BY X

In case of claims or returned goods, please present this bill

FORM ES 610-3

ASSIGNMENT SHEET #3

PIONEER SEEDS

BOURN FEED & SUPPLY, INC.

Phone 474-4113

RED BANNER SERVICE

4011 I 70 DR. S.E.
COLUMBIA, MISSOURI, 65201

Accounts Not Paid By 10th of The Month Following The Month of Purchase Will Be Subject To A Service Charge Computed At The Rate of 2% Per Month On the Unpaid Balance

CUSTOMER'S ORDER NO	PHONE NO	DATE
		19

SOLD TO

ADDRESS

CITY

SOLD BY	CASH	C.O.D	CHARGE	ON ACCT	MDSE RETD	PAID OUT	

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15		TAX	
16		TOTAL	

63555

Thank You.

REC'D BY X

In case of claims or returned goods, please present this bill

FORM ES 510-2

BUSINESS PROCEDURES AND RECORDS
UNIT II

ANSWERS TO ASSIGNMENT SHEET #1

1. Loss of one ton of feed = \$100--He would have to sell 10 tons of feed in order to make up the \$100.
2. Loss of one-half ton of fertilizer = \$67.50--He would have to sell 15 tons of fertilizer in order to make up the \$67.50.
3. Loss of one flower arrangement = \$20--He would have to sell three (3) arrangements in order to make up the \$20.

BUSINESS PROCEDURES AND RECORDS
UNIT II

TEST

1. Match the terms in the right-hand column to their correct definitions in the left-hand column.

_____a. Discount given for buying in bulk

_____b. Discount given for paying for merchandise in cash, usually no larger than two or three percent

_____c. Discount for buying merchandise before season

_____d. Discount given for buying large volumes of merchandise

1. Cash discount
2. Quantity discount
3. Bulk discount
4. Early season discount

2. Discuss the importance of the sales ticket.

3. Distinguish between customers and sales managers sales receipt information by placing an "S" for store manager and "C" for customer in the correct blanks. (NOTE: Answers can be used more than once.)

_____a. A record of his expenses during the year

_____b. Amount of sale

_____c. Information needed to charge purchases to customer's accounts

_____d. Amount of sales tax collected

_____e. Record in cases of disputed accounts

_____f. Amount of merchandise sold

_____g. Record in case of need to return merchandise

_____h. Permanent record of sales

4. List three jobs that are essential to maintain control of the recording process each day.

   a.

   b.

   c.

5. Describe how you make change.

6. Describe how you properly cash a check.

7. Select from a list ways to handle a sales ticket after the transaction, by placing an "X" in the appropriate blanks

_____a. One carbon copy is placed in the bank receipts

_____b. The original (first copy) is filed by the company as a permanent record of sales and all other transactions

_____c. One carbon copy is the "customer copy" which he either receives when he makes the purchase or it is sent to him at the end of the month with a monthly statement

_____d. One carbon copy may be a delivery copy to go along with the merchandise in case it is delivered

_____e. One carbon copy may be filed as a patronage record for members of a cooperative company

8. Describe how you properly fill out a credit card sales draft.

9. Describe when you fill out returns and exchanges for credit cards.

10. Describe how you fill out telephone and mail order credit card sales drafts.

11. List when to obtain sales authorization for credit cards.

    a.
    b.
    c.
    d.
    e.
    f.

12. Describe how to obtain authorization for credit card use.

13. Describe how to deposit credit card sales drafts.

14. Demonstrate how to properly prepare a sales ticket.

15. Demonstrate how to prepare a sales ticket using discounts.

(NOTE: If these activities have not been accomplished prior to the test, ask your instructor when they should be completed.)

BUSINESS PROCEDURES AND RECORDS
UNIT II

ANSWERS TO TEST

1. a. 3
   b. 1
   c. 4
   d. 2
2. Discussion should include:
   a. Permanent record of each transaction
   b. First record of the sale of merchandise from the company
   c. Heart of the accounting or bookkeeping system
   d. Record of the customer's expenses for the year
3. a. C
   b. S
   c. S
   d. S
   e. C
   f. S
   g. C
   h. S
4. a. Total sales tickets for each day
   b. Subtotal in ledger each day
   c. Change the balance of customer's accounts receivable
5. Description should include:
   a. State the amount given to you by the customer and the amount of the sale
   b. Place the amount received on the cash register
   c. Properly ring up the sale
   d. Starting with the amount of the sale, add up the change to the amount received from the customer
   e. Give receipt to customer and add back change to customer
   f. Place money received into the proper place in the register drawer

6. Description should include:
    a. Check the date
    b. Check the amount in figures with the written amount
    c. Inspect the signature of the person who signed the check
    d. Check to whom the check is made payable
    e. If the check is not personalized, secure the address of the person cashing the check
    f. Ask the person writing the check for identification
    g. Call the manager if there is some question about the check or if store policy requires that the manager approve each check
    h. Initial the check
    i. If the check is for the full amount of the order and is approved, treat it as a cash sale
    j. Endorse the check immediately either by stamp or by placing it on the cash register printing table
7. b, c, d, e
8. a. Check charge card for valid expiration date
    b. Compare card number with CURRENT WARNING
    c. Enter the date, description of merchandise or services, sales tax and total
    d. Enter authorization number
    e. Place card face up in imprinter
    f. Place sales draft face up in imprinter over card
    g. Imprint by firmly moving imprinter handle completely across sales draft and returning to original position
    h. Check for clear impression on last copies, then present sales draft to customer for signature
    i. Compare signature on sales draft with signature on the credit card
    j. If any irregularities are present, call authorization center
9. a. Return of merchandise for credit without exchange: prepare credit voucher for full amount of return, including tax
    b. Even exhange of merchandise: there is no need to prepare a new sales draft
    c. Exchange for merchandise if the exchange is not even: prepare a credit/refund draft for the full amount

10. a. Fill out sales draft same as without charge card, including cardholders account number and expiration date

  b. Initial and identify sale as (TO) telephone order or (MO) mail order on signature line

  c. For all telephone and mail orders over $50.00, follow normal authorization procedure outlined below

  d. Sales draft should be signed when merchandise is delivered, if at all possible

  e. Customer must receive cardholder copy of sales draft

11. a. If the amount of sale is greater than your floor limit

  b. When a charge card number appears on a Hot Card

  c. On a no-card or no-imprint in-store transaction

  d. On all telephone and mail orders over $50.00

  e. In the case of banks, on all cash advances

12. a. Call the authorization center--The phone number is on the sticker on your telephone

  b. Tell the authorization operator whether the transaction is a merchandise sale (or a cash advance - banks only), the cardholders account number, the last six digits of your merchant identification number and the amount of the sale

  c. If approval is granted, the authorization operator will give you the authorization number

  d. If approval is not granted by the authorization center, do not complete the sale credit card transaction

  e. If you are requested to honor an over-floor limit sale without authorization, you honor the sale at your own risk

13. a. Imprint your merchant name and number on the merchant summary form using your merchant identification card in the imprinter

  b. Complete the merchant summary form using space provided

    1) Total number of sales drafts
    2) Total dollar volume of sales drafts
    3) Total number of credit vouchers
    4) Total dollar volume of credit vouchers
    5) Gross deposit
    6) Signature
    7) Date

  c. Separate the merchant summary form copies

  d. Staple the first copy of the summary to the outside of the envelope and forward to your bank of deposit

  e. Retain third copy for your own records

  f. Seal envelope

g. Fill out your regular bank deposit slip, insuring the deposit agrees with the amount shown on the merchant summary form

h. Deliver the deposit to your bank in the usual manner

14. Evaluated to the satisfaction of the instructor.

15. Evaluated to the satisfaction of the instructor.

SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to select a project from the various types available, establish goals for his or her four years in Vocational Agriculture, and set ways and means of reaching those goals. This knowledge will be evidenced through actual demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Describe the four types of supervised occupational experience programs.
2. Identify and describe the supplementary, improvement, and occupational skills.
3. Describe five reasons for having a supervised on-job experience program.
4. List the possibilities of securing a supervised on-job experience program.
5. Prepare a plan necessary before securing a supervised on-job experience program.
6. Select from a list the requirements for the State Farmer Degree in agribusiness.

SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

SUGGESTED ACTIVITIES

I. Instructor:
  A. Provide students with objectives.
  B. Provide students with information and assignment sheets.
  C. Discuss terminal and specific objectives.
  D. Discuss the information sheet.
  E. Give test.

II. Student:
  A. Study and explain objectives.
  B. Discuss information sheet.
  C. Complete assignment sheet.
  D. Select and develop plans for a program.
  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
  A. Objectives
  B. Information sheet
  C. Assignment sheets
    1. Assignment Sheet #1 - Occupational Objective Sheet
    2. Assignment Sheet #2 - Specific Experiences to be Gained
  D. Transparency masters
    1. TM 1 - State Farmer Scoresheet
  E. Test
  F. Answers to test

II. References:
  A. Kansas Farm Record Book

B. Carwin, Merle A. Supervised Occupational Experience Manual. Danville, Illinois: Interstate Printers and Publishers Inc., 1972.

SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

INFORMATION SHEET

I. Types of supervised occupational experience programs

  A. Cooperative occupational experience program

    1. Agribusiness occupational objectives
    2. On-the-job training program
    3. Work in area of sales and/or service

  B. Placement in agricultural production

    1. Production and/or non-production objectives
    2. Placed on-the-job for a minimum length of time (450 hrs.)
    3. Skills and information necessary for placement

  C. Agricultural occupation training under the school laboratory situation.

    1. Have either production or non-production occupational objectives
    2. School facilities (school farm, greenhouse, shop, etc.)

  D. Non-agribusiness programs (production agriculture)

    1. Have production projects
    2. Have production occupational objectives
    3. Should include production and improvement projects

II. Supplementary farm skills and improvement projects

  A. Improvements projects - An undertaking which involves a series of jobs designed to improve the appearance and real estate value of the farm and/or the efficiency of the farm business as a whole and which contributes to the comfort or conveniences of the farm family

  Examples: Home improvement, farm library, beef improvement, or other projects

  B. Supplementary farm practice or skills - A farm job for additional experience, skill and/or efficiency not included in the jobs in the student's productive farm enterprise or improvement project

  Examples: Welding panels, marketing cattle, loading hogs, or other skills

III. Reasons for having a program
   A. Learn responsibility
   B. Gain experience
   C. Earn money
   D. Develop management abilities
   E. Prepare for a career
   F. Learn record keeping
   G. Learn new skills
   H. Establishment in farming

IV. Sources of projects
   A. Other students in chapter
   B. Farmers or ranchers
   C. Livestock sales
   D. School facilities
   E. Local businesses

V. Preparation for the project
   A. Place for the project
   B. Application
   C. Job requirements
   D. Job interview
   E. Financing
      1. Student
      2. Parents
      3. Cooperating business

VI. Requirements for state farmer degree (Transparency 1)
   A. Active member of FFA for two years
   B. Two years of instruction in Vocational Agriculture
   C. Have received the chapter farmer degree
   D. Incoming seniors to out-of-school FFA members eligible
   E. Outstanding program of supervised farming
   F. Have a satisfactory scholastic record
   G. Proficiency in parliamentary procedure
   H. Give a five minute speech
   I. Evidence of leadership and cooperation

J. Earnings of $500 or more from supervised training program or 600 accumulated hours in supervised training

K. Participate in five FFA activities above the chapter level

L. Served as an officer and/or committee chairman, or a participating member of a major committee

M. Participate in the planning and completion of chapter Program of Activities

N. Submission of official FFA record books

O. Application mailing date specified on Kansas FFA calendar

Agribusiness

Production

STATE FARMER EVALUATION SHEET

(This is only a guide)

Candidate No. ____________ Total points ____________

A. Scholarship — 10 points (Part I - Agribusiness & Production)
   - B or above 10 pt. ________
   - C average 5 pt. ________
   - D average 0 pt. ________

Total ________

B. Leadership -- 23 points
1. FFA -- 19 points
   - a. FFA officer 2 pt. ________
   - b. Leadership School 2 pt. ________
   - c. Summer FFA Camp 2 pt. ________
   - d. Participation in public speaking (local 1 pt., district 2 pts., or state 3 pts.) 3 pt. ________
   - e. Attend State or National Convention 2 pt. ________
   - f. Participation in district or state judging schools (land judging, crops, meats, entomology, parliamentary procedure, poultry, livestock, dairy, dairy products-1 point per area with maximum of 4 pts.) 4 pt. ________
   - g. Other public appearances representing FFA (1 point for each appearance with maximum of 2 points) 2 pt. ________
   - h. Co-op activities (from leadership page) 1 pt. ________
   - i. Other 1 pt. ________
2. Other high school -- 2 points
   - a. Officer of a class or other school organization 1 pt. ________
   - b. Member of other organization (including athletics) 1 pt. ________
3. Other — 2 points
   - a. Church participation 1 pt. ________
   - b. Others 1 pt. ________

Total ________

C. Farm Mechanics — 10 points
1. Based on number and variety of skills as well as quantity of production 8 pt. ________
2. Farm mechanics contest team (district, state) 2 pt. ________

D. Improvement and supplementary practices -- 3 points
1. Improvement 2 pt. ________
2. Supplementary practices 1 pt. ________

Total ________

Part II (Agribusiness Only)

A. Occupational Experience Program -- 34 points
   1. One point per $100 labor income with a maximum of 10 points 10 pt. __________
   2. One point per 50 hours of experience with a maximum of 15 points 15 pt. __________
   3. Add 2 points each time the beginning net worth is doubled with a maximum of 4 points 4 pt. __________
   4. Specific experiences gained 5 pt. __________

Total __________

B. Record Book -- 20 points
   1. Completeness -- 14 points
      a. Plans for getting started 1 pt. __________
      b. Record of where worked 1 pt. __________
      c. Occupational experience plans 1 pt. __________
      d. Improvement projects 1 pt. __________
      e. Agreement 3 pt. __________
      f. Financial records 1 pt. __________
      g. Summary of work and earnings 2 pt. __________
      h. Summary of non-cash earnings 1 pt. __________
      i. Financial statement 1 pt. __________
      j. Leadership and cooperative records 1 pt. __________
      k. Visits and conferences 1 pt. __________
   2. Accuracy -- 6 points
      a. Cash balance (sheet should be enclosed with application; within 1% of cash receipts--3 pts.; 1-5%--2 pts.; 5-10%--1 pt.; over 10%--0 pts.) 3 pt. __________
      b. Accurate throughout 3 pt. __________

Total __________

Part II (Production Only)

A. Farming Program -- 34 points
   1. Gain in net worth -- 16 point
      a. One point per each $100 increase in net worth with a maximum of 12 points 12 pt. __________
      b. Add 2 points each time the beginning net worth is doubled with a maximum of 4 points 4 pt. __________
   2. Productive enterprises (this may include one or more) 18 pt. __________

Total __________

B. Record Book -- 20 points (pages refer to Record Book)
   1. Completeness -- 14 points
      a. Diary, pages 4-5 1 pt. __________
      B. Agreement, page 7 3 pt. __________
      c. Receipts, pages 10-13 1 pt. __________
      d. Expenses, pages 16-25 1 pt. __________
      e. Inventory, pages 26-27 2 pt. __________
      f. Depreciation Schedule, page 26 1 pt. __________
      g. Complete analysis of farming program, pages 31-42 4 pt. __________
      h. Personal expenditures, pages 43-44 1 pt. __________
   2. Accruacy -- 6 points
      a. Cash balance (sheet should be enclosed with application; within 1% of cash receptions--3 pts., 1-5%--2 pts., 5-10%--1 pt., over 10%--0 pts.) 3 pt. __________
      b. Accurate throughout 3 pt. __________

Total __________

TM 1
(continued)

SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

INFORMATION SHEET NO. 1

Candidate Occupational Objective: To become the manager of the Uniontown Implement Sales and Repair Shop.

What it will take to reach this occupational objective	Plans for reaching occupational objectives	Extent of experiences already received in reaching occupational objective
Experience 1. Work in as many areas in this field so my training experiences will start me on my way towards my career goal of managership of the Implement Shop	Work for dealer in Uniontown while in high school during the school year and extend into summer employment	I am currently employed by the dealer in Uniontown and have set up a 4 year plan of experiences to be completed here and have an agreement with Mr. Smith for summer employment and after two years of Vo-Tech I plan to return as a mechanic in the shop
Education 2 years Vo-Tech and major in mechanics	Plan to attend Vo-Tech for 2 years and major in mechanics	Three months working for dealership
Cost $300 plus room and board	Save money earned while on the job to finance education	Earned $396 while in employment at shop (9/1 - 12/31) Saved
Other		

INFORMATION SHEET

Specific experiences to be gained: Indicate the specific experiences to be gained that will assist in achieving your desired career goal.

Occupational objective: Manager of a farm implement sales and repair shop

Name of business in which agribusiness experience is obtained	Specific Experience and/or Skills Developed	Indicate how each experience will assist you towards achieving your occupational goal
Uniontown Implement Sales and Repair Shop	1. Organization of shop area and tools	a. Realizing the value of a clean shop b. Understand the value of proper tool location c. Training in organizing the repair shop

ASSIGNMENT SHEET #1 - OCCUPATIONAL OBJECTIVE SHEET

NOTE: No supplemental pages are to be added except pages for photographs

Qualifying Programs: Programs that provide exploratory experiences and to develop occupational competencies needed by individuals preparing to enter the occupations of Sales and Service in off-farm agriculture. Experiences may be in feed and other farm supply stores, agricultural equipment dealerships, lumber and buildings supply stores, florist shops, garden centers and landscape maintenance firms (For more information on this program, please consult your chapter Agricultural Proficiency Award Guide.)

A. Applicant's Vocational Objective: (To be completed by the applicant) State your ultimate career goal and your plan for achieving this goal. This section will not be scored by the judges, its only purpose is to define the basis for the experiences you received through your experience program.

Candidate's occupational objective____

What it will take to reach this occupational objective	Plans for reaching occupational objective	Extent of experiences already received in reaching occupational objective
Experience:		
Education:		
Cost:		
Other:		

ASSIGNMENT SHEET #2 - SPECIFIC EXPERIENCES TO BE GAINED

Indicate the specific experiences to be gained that will assist in achieving your desired career goal.

Name of Business Agribusiness experience is obtained	Specific experience and/or skills developed	Indicate how each experience will assist you towards achieving your occupational goals

SUPERVISED ON-JOB EXPERIENCE PROGRAMS
FOR AGRIBUSINESS

TEST

1. Describe the four types of supervised occupational experience programs

    a.

    b.

    c.

    d.

2. Distinguish between a supplementary farm skill and an improvement project by placing an "X" by the improvement projects and "O" by the supplementary farm skills listed below.

    _____a. Home improvement

    _____b. Fixed corral

    _____c. Swine improvement

    _____d. Load cattle in truck

    _____e. Farm library

    _____f. Hauled cattle to market

    _____g. Beef improvement

    _____h. Groomed beef cattle

    _____i. Pasture improvement

    _____j. Built 1/4 mile fence

3. List five reasons for having a supervised occupational experience program

    a.

    b.

    c.

    d.

    e.

4. List three sources of securing an agribusiness type project.

   a.

   b.

   c.

5. Discuss the preparation necessary before securing an agribusiness project.

6. Select from a list the requirements for state farmer by placing an "X" in the blank provided.

   _____a. Active member of FFA for two years

   _____b. Earn $95 from project program

   _____c. Two years of instruction in Vocational Agriculture

   _____d. Greenhand for two years

   _____e. An incoming senior in school or out-of-school FFA member

   _____f. Lead a group discussion for one hour

   _____g. Submit official FFA record book

   _____h. Application mailed by February 15

SUPERVISED ON-JOB EXPERIENCE PROGRAMS
FOR AGRIBUSINESS

ANSWERS TO TEST

1. Description should include:
    a. Supervised farming program
        1. Have production projects
        2. Have production occupational objective
        3. Should include production and improvement projects
    b. Cooperative occupational experience program (VAOT)
        1. Have non-productive occupational objective
        2. Have on-the-job training programs
    c. Agricultural occupation training under the laboratory situation
        1. Have either production or non-production occupational objective
        2. Facilities provided by school
    d. Farm placement
        1. Production or non-production objective
        2. Placed in a real life situation for certain length of time for training

2. a. X
    b. O
    c. X
    d. O
    e. X
    f. O
    g. X
    h. O
    i. X
    j. O

3. Any five of the following
    a. Learn responsibility
    b. Gain experience
    c. Earn money
    d. Develop management abilities
    e. Prepare for career
    f. Learn record keeping
    g. Learn new skills
    h. Establishment in farming

4. Any three of the following
    a. Other students in chapter
    b. Farmers or ranchers
    c. Livestock sales
    d. School facilities
    e. Local businesses

5. Discussion should include:
    a. Place for project
    b. Application
    c. Job requirements
    d. Job interview
    e. Financing

ANALYSIS AND EVALUATION OF THE ON-JOB EXPERIENCE PROGRAM IN AGRIBUSINESS

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to name reasons for using job analysis and evaluation. He or she should be able to determine the benefits of the program. He or she should be able to identify the strong and weak points of the experience program and compare them to his fellow classmates. This knowledge will be evidenced through filling out the completion reports.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Name three reasons for using job analysis.
2. Describe the benefits and hazards of the experience program.
3. Identify the strong and weak points of the job experience program and compare them with other job experience programs of the class.
4. Complete a summary sheet of the program.
5. Complete an accurate and current record book.

ANALYSIS AND EVALUATION OF THE ON-JOB EXPERIENCE PROGRAM IN AGRIBUSINESS

SUGGESTED ACTIVITIES

I. Instructor:
   - A. Provide students with objective sheet.
   - B. Provide students with information and assignment sheets.
   - C. Discuss terminal and specific objectives.
   - D. Discuss information and assignment sheets.
   - E. Hand each student a summary sheet outline.

II. Students:
   - A. Read objectives.
   - B. Study information sheets.
   - C. Complete the summary sheet.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   - A. Objectives
   - B. Information sheets
   - C. Assignment sheet
     - 1. Assignment Sheet #1 - Completing Job Evaluation Sheet

II. References:
   - A. Kansas Vocational Agriculture Agribusiness Record Book. Interstate Printers and Publishers Inc., Danville, Illinois.
   - B. Cooperative Vocational Education. State Department of Vocational and Technical Education; Stillwater, Oklahoma.

ANALYSIS AND EVALUATION OF THE ON-JOB EXPERIENCE PROGRAM IN AGRIBUSINESS

INFORMATION SHEET

I. Reasons for using job analysis
   A. Aids in the planning for the future opportunities and rewards of a job
   B. Serves as a comparison between one or more job opportunities
   C. Identifies interests, strengths and weaknesses of the individual
   D. Provides an evaluation and appraisal of an agribusiness job

II. Analysis of the benefits and hazards of the experience program
   A. Physical requirements
   B. Educational requirements
   C. Environmental conditions to work with
   D. Starting and projected salary and other monitary benefits
   E. Future advancement and opportunities
   F. Living conditions the job would offer the family
   G. Was the job what I expected and was I happy?
      1. Why
      2. Suggestions for improvement

III. Comparison of strong and weak points of job experience program
   A. Use the chart on job evaluation sheet for comparison
   B. Obtain information from each student.

IV. Job Evaluation Sheet

A. Example:

Job Title	Physical Requirements	Educational Requirements	Environment Cond. Expected	Starting & Projected Salary	Future Advancement & Opportunities	Family living Conditions	Was the job What I Expected
Parts Salesman	Active & Mechanical	Voc. Educ. & job training	Inside & Outside	$2.90/hr. to #13,000/yr	Limited in areas	Depends on city	Yes
Nursery Worker	Some heavy outside work	On-job training or College degree	Outside	$2.90/hr. to $12,000/yr.	Depends on Educ. and locality	Good	Hard work
Farm Worker	Labor	Farm experience Agric. Educ.	Outside	$3/hr. and up	Very good	Farm	Yes

ASSIGNMENT SHEET #1 - Completing Job Evaluation Sheet

Job Title	Physical Requirements	Educational Requirements	Environment Cond. Expected	Starting & Projected Salary	Future Advancement & Opportunities	Family living Conditions	Was the job What I Expected

PLANNING AND IMPLEMENTING SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to select an agribusiness job from the various types of jobs available, establish goals for his four years in Vocational Agriculture, and set ways and means of reaching those goals. The student should be able to apply the fundamentals of beginning record keeping. Each student involved should complete the record book with all business figures 100 percent accurate. The information pages in the record book should be 90 percent accurate.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Describe the candidate occupational objective page and complete his/her own plan for his/her occupational objectives.
2. Complete his/her supervised occupational experience agreement.
3. Complete his/her plan for specific experiences to be gained.
4. Complete the sheet titled "Other Information" for agribusiness.
5. Complete the agribusiness record book to the teachers satisfaction.

PLANNING AND IMPLEMENTING SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

SUGGESTED ACTIVITIES

(NOTE: This unit is designed for individualized students having programs in agribusiness)

I. Instructor:

- A. Provide students with objective sheet
- B. Provide students with information and assignment sheets
- C. Discuss terminal and specific objectives
- D. Evaluate completed assignment sheets
- E. Give additional sheets for record book

II. Students:

- A. Read objectives
- B. Study information sheets
- C. Complete assignment sheets
- D. Hand in completed assignment sheets for evaluation
- E. Staple completed assignment sheets in record book

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objectives
- B. Information sheets
- C. Assignment sheets
  - #1 - Occupational objective page
  - #2 - Supervised occupational experience agreement
  - #3 - Specific experiences to be gained
  - #4 - Other information

II. References:

- A. Kansas Farm Record Book
- B. National Proficiency Awards for 79-80: Placement in Sales and Services; Placement in Processing; American Farmer and Agribusinessman.

INFORMATION SHEET

I. Candidate Occupational Objective

A. Example

Candidate Occupational Objective: to become the manager of the Uniontown Implement Sales and Repair Shop.

What it will take to reach this occupational objective	Plans for reaching occupational objectives	Extent of experience already received in reaching occupational objective
Experience Work in as many areas in this field so my training experiences will start me on my way towards my career goal of managership of the Implement Shop	Work for dealer in Uniontown while in high school during the school year and extend into summer employment	I am currently employed by the dealer in Uniontown and have set up a 4 year plan of experiences to be completed here and have an agreement with Mr. Smith for summer employment and after two years of Vo-Tech I plan to return as a mechanic in the shop
Education 2 years Vo-Tech and major in mechanics	Plan to attend Vo-Tech for 2 years and major in mechanics	Three months working for dealership
Cost $300.00 plus room and board	Save money earned while on the job to finance education	Earned $396 while in employment at shop (9/1 - 12/31) Saved
Other		

II. Supervised Occupational Experience Agreement

A. Replaces Farming Program Agreement page in record book

B. Example

Supervised Occupational Experience Agreement

Starting date: 9/1/79

Ending date: 8/21/80, with chance for employment while in Vo-Tech and also after completion of schooling

Hours: 2 hours after school each day with 8 hours on Saturday: 44 hours during summer each week with three weeks off

Wages: start at $1.90 per hour with increase of $.05 per hour each two months up to $2.60 per hour while in school

Experiences:

1. Learn the responsibilities towards the company
    a. Attitude
    b. Communications
    c. Employee economics
2. Organization of shop area and tool storage
3. Learn to be a mechanic's helper and take directions
4. Procedures in loading and delivering machinery
5. Repair and assembling machinery problems
6. Learn to read repair and parts manuals, and locate parts in storage
7. Learn to start, keep and price a customer's bill
8. Learning to order parts and check in
9. Develop skills in salesmanship of products

III. Plan for specific experiences to be gained

A. Example

Specific experiences to be gained: indicate the specific experiences to be gained that will assist in achieving your desired career goal.

Occupational objective: Manager of a farm implement sales and repair shop

Name of business in which agribusiness experience is obtained	Specific Experience and/or Skills Developed	Indicate how each experience will assist you towards achieving your occupational goal
Uniontown Implement Sales and Repair Shop	1. Organization of shop area and tools	a. Realizing the value of a clean shop b. Understanding the value of proper tool location c. Training in organizing to repair shop

IV. Other information

A. Example

Agribusiness
(course name)

9-2-79
(date)

Name Doe (last) John (first) L. (MI) Class Sr. Age 17

Address 600 Main Post Office Your town

Telephone Number 000-123-6010 Date of Birth 3-10-62

Social Security Number 211-61-5111 KS Drivers License # A 2N2E1

Father's Name Don Mother's Name May

Direction to Home if applicable 1200 Main

Father's Occupation Teacher Mother's Occupation Home

No. of Brothers 1 Number of Sisters 1

Size of Farm (both rented and owned) Total 0 Pasture ____ Crops ____

Are you in 4-H No What FFA Degrees do you have Chapter farmer

List your class schudule on the back of this page

Agriculture Mechanics Work or Project Kind of Work	Agr. Sales and Services Kind of Work
Overhaul Lawn mower Picnic Table	Service man at Joe's Machinery

What is your occupational objective and occupational objective code? 0101, 0102, 0103, 0104, 0105, 0106, 0107, 0199 0103

What are your plans after graduating from high school? Mechanic

Why did you enroll in this course? FFA leadership and knowledge of agriculture and mechanics

List previous courses taken in Vocational Agriculture I, II, III

Name John Doe

CLASS SCHEDULE

PERIOD	1	2	3	4	5	6	7	8	9	10
TIME	8:15	9:12	10:10	11:07	12:40	1:37				
Monday	Gov.	Eng. IV	Vo-Ag IV	Sen. Math	Bus. Law	S.H.				
Tuesday	↓	↓	↓	↓	↓	↓				
Wednesday	↓	↓	↓	↓	↓	↓				
Thursday	↓	↓	↓	↓	↓	↓				
Friday	↓	↓	↓	↓	↓	↓				

ASSIGNMENT SHEET #1 - OCCUPATIONAL OBJECTIVE PAGE

NOTE: No supplemental pages are to be added except pages for photographs

Qualifying Programs: Programs that provide exploratory experiences and to develop occupational competencies needed by individuals preparing to enter the occupations of Sales and Service in off-farm agriculture. Experiences may be in feed and other farm supply stores, agricultural equipment dealerships, lumber and building supply stores, florist shops, garden centers and landscape maintenance firms (For more information on this program, please consult your chapter Agricultural Proficiency Award Guide.)

A. Applicant's Vocational Objective: (To be completed by the applicant) State your ultimate career goal and your plan for achieving this goal. This section will not be scored by the judges, its only purpose is to define the basis for the experiences you received through your experience program.

Candidate's occupational objective____________________

What it will take to reach this occupational objective	Plans for reaching occupational objective	Extent of experiences already received in reaching occupational objective
Experience:		
Education:		
Cost:		
Other:		

ASSIGNMENT SHEET #2

SUPERVISED OCCUPATIONAL EXPERIENCE AGREEMENT

Starting date:____

Ending date:____

Hours:____

Wages:____

Experiences:____

PLANNING AND IMPLEMENTING SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

ASSIGNMENT SHEET #3 - SPECIFIC EXPERIENCES TO BE GAINED

Indicate the specific experiences to be gained that will assist in achieving your desired career goal.

Name of Business Agribusiness experience is obtained	Specific experience and/or skills developed	Indicate how each experience will assist you towards achieving your occupational goals

PLANNING AND IMPLEMENTING SUPERVISED ON-JOB EXPERIENCE PROGRAMS FOR AGRIBUSINESS

ASSIGNMENT SHEET #4 - OTHER INFORMATION

____
(course name)

____
(date)

Name______________________________Class_____________Age_________

Address__________________________Post Office_____________________

Telephone Number___________________Date of Birth__________________

Social Security Number____________KS Drivers License #________________

Father's Name_____________________Mother's Name____________________

Direction to Home if applicable____________________________________

Father's Occupation________________Mother's Occupation_______________

No. of Brothers___________________No. of Sisters____________________

Are you in 4-H________What FFA Degrees do you have____________________

List your class schedule on the back of this page.

Agriculture Mechanics Work or Project	Ag . Sales and Services
Kind of Work	Kind of Work

What is your occupational objective and occupational objective code? 0101, 0102, 0103, 0104, 0105, 0106, 0107, 0199______________________________

What are your plans after graduating from high school?___________________

____

Why did you enroll in this course?____________________________________

____

List previous courses taken in Vocational Agriculture___________________

____

Name________________________

CLASS SCHEDULE

PERIOD	1	2	3	4	5	6	7	8	9	10
TIME										
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										

INSURANCE
UNIT IV

TERMINAL OBJECTIVE

After the completion of Unit IV, the student should be able to match terms associated with insurance to the proper definition. He should be able to match the various types of liability, property, life, and health insurance when given the correct definition and to select from a list the factors that influence rates for various kinds of insurance. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student will be able to:

1. Match terms associated with insurance to the proper definition.
2. Match the type liability insurance with the proper definition.
3. Match the basic auto coverages with the proper definition.
4. Interpret the liability limit of a 10-20-5 policy.
5. Select from a list the factors to consider when determining what coverages to buy for an automobile.
6. Select from a list those items that influence automobile insurance premiums.
7. List ways to save on automobile insurance.
8. Match the type property insurance with the correct definition.
9. Select from a list those items that influence cost of property insurance.
10. Name the basic rules to use when buying property insurance.
11. Distinguish between crop hail insurance and federal crop insurance.
12. Match the kind of life insurance policy with the characteristics of each kind.
13. Discuss in writing instances when a family income life insurance policy would be needed most.
14. Select from a list the factors that determine the amount of life insurance needed.
15. Match the kind of health insurance with the proper definition.
16. Select from a list the features of workmen's compensation insurance.
17. Select from a list the kinds of work covered by social security, and who must pay social security tax.

18. Select from a list the benefits which are paid from social security funds.

19. Select from a list the reasons social security payments may stop.

20. Evaluate a family insurance program and make recommendations for improvements.

INSURANCE
UNIT IV

SUGGESTED ACTIVITIES

I. Instructor:

1. Provide students with objective sheet.
2. Provide students with information and assignment sheets.
3. Make transparency.
4. Discuss terminal and specific objectives.
5. Discuss information and assignment sheets.
6. Give test.

II. Students:

1. Read objectives.
2. Study information sheet.
3. Complete assignment sheet.
4. Take test.

INSTRUCTIONAL MATERIALS

I. Provided in this unit:

1. Objectives
2. Information sheet
3. Transparency masters
    1. TM 1 - Social Security--Where the Money Comes From Where the Money Goes
4. Assignment sheets
    1. Assignment Sheet #1 - Evaluating Your Family Insurance Program
5. Test
6. Answers to test

II. References:

1. A Teacher's Guide for Insurance: A Business and Office Curriculum Project. Department of Vocational Education, Colorado State University, Fort Collins, Colorado, 1971.

2. Kelsey-Daniels. Handbook of Life Insurance. Institute of Life Insurance, 277 Park Avenue, New York, 10017.
3. Your Social Security. Superintendent of Documents. U.S. Government Printing Office. Washington, D.C. 20402, 1970.
4. Doane's Farm Management Guide

INSURANCE
UNIT IV

INFORMATION SHEET

I. Terms and definitions

   A. Annuity - A contract that provides an income for a specified period of time such as a number of years or for life

   B. Application - A statement of information made by a person applying for insurance

      (NOTE: This becomes part of the policy.)

   C. Automatic premium loan - A provision authorizing the premium to be subtracted from policy cash values if not paid by the end of the grace period

   D. Beneficiary - Person named in the policy to receive proceeds at death of insured

   E. Cash value - Amount available in cash upon voluntary termination of policy before death

   F. Convertible - Term insurance exchanged at option of policyholder without evidence of insurability for another insurance plan

   G. Disability benefit (Waiver of premium) - The provision added to life insurance to pay premiums if totally and permanently disabled

   H. Double indemnity - An accidental death benefit to pay double face amount in case of death by accident

   I. Endowment insurance - Insurance payable to the insured if living on maturity date or death prior to maturity

   J. Face amount - Amount stated on the face of the policy that will be paid in case of death or at maturity

   K. Grace period - A period (usually 31 days following the premium due date during which a premium may be paid without a penalty)

      (NOTE: This applies only to life insurance where stated and sometimes health insurance.)

   L. Group insurance - Insurance which is usually issued without medical examination on a group of persons under a single master contract

   M. Lapsed policy - A policy terminated for nonpayment of premium

   N. Policy - Document stating terms of contract that is issued to policyholder by the company

   O. Policy dividend - A refund of part of the premium on participating policies plus interest

   P. Policy loan - Cash loaned on the cash value of policy at a specified interest rate

   Q. Premium - The payment or consideration one makes as a policyholder in agreement with the policy for insurance

R. Insurance - Spreads the risk of one person's misfortune among a large number of persons

S. Family income life insurance - A combination of permanent life insurance and decreasing term insurance

T. Homeowner's policy - A combination of several coverages or protections in one policy regarding home, personal property, and liability insurance

U. Credit insurance - Written through lending institutions on lives of borrowers

V. Permanent life insurance - Includes straight life, limited pay, and endowment

W. Term life insurance - Gives protection for a stated period of time and at the end of term is the termination of contract

Examples: 5 year term, 15 year term, decreasing term, or term to age 65

X. Liability - When one is negligent and therefore liable for injury or damage caused to someone else

(NOTE: Liability insurance protects one from claims made by other people and provides defense in the event of a groundless suit. Liability limits should be equal to assets.)

Z. Co-Insurance - When one is carrying part of the risk and is not fully insured

AA. No fault insurance - In regard to auto insurance, everyones company will pay for their own damage and injury

(NOTE: State laws may amend this concept.)

BB. Loss payable clause - Names the mortgage company on the policy whereby any claim is payable to mortgage company up to the amount of mortgage

II. Types of liability insurance

A. Public liability - Protects policyholder from lawsuits by members of the public who suffer property or bodily injury caused by his negligence

(NOTE: This would apply to auto liability and farmer's comprehensive liability.)

B. Employer's liability - Protects employer when he is liable for on-the-job accidents caused by his negligence

(NOTE: This covers loss of time, medical care, bodily injury, sickness, and death.)

C. Workmen's compensation - Pays the employee's medical expense regardless of who is negligent

D. Farmer's comprehensive liability - Similar to public liability but is designed specifically for farmers

III. Basic automobile coverages

A. Bodily injury liability - Protects the policyholder financially if he or a member of his family injures someone while operating his vehicle

B. Property damage liability - Protects the policyholder financially if he or a member of his family damages someone's automobile or other property

(NOTE: Most policies also offer liability protection for one if driving a borrowed car, or if loaning one's care to someone else.)

C. Medical reimbursement - Pays for any medical, dental, hospital, nursing, or funeral expenses incurred as the result of an auto or truck accident involving the insured vehicle regardless of fault

D. Comprehensive physical damage - Insures auto against glass breakage, fire, theft, and all weather elements

E. Collision - Insurance pays for damage to one's care regardless of the burden of negligence

(NOTE: Deductible choice ranges from $10 to $250.)

F. Protection against the uninsured motorist - Coverage for holder to recover loss for bodily injury caused by a person having no liability insurance

IV. Interpretation of a 10-20-5 automobile policy

A. Ten indicates insured person is protected against damages up to $10,000 for one person

B. Twenty means insured person is protected against damages up to $20,000 for two or more persons injured in one accident

(NOTE: This is not in addition to the $10,000 protection for one person.)

C. The five indicates insured person is protected against 5,000 property liability damage

(NOTE: It costs very little to raise liability limits. 100-300-100 costs as little as $10.00 more per year than 10-20-5.)

V. Factors to consider when determining types of automobile coverages to buy

A. Liability insurance should be purchased for every licensed vehicle

B. Liability limits should be the same on all vehicles

(NOTE: Minimum liability limits should be equal to one's assets.)

C. It is advisable to carry medical insurance on every vehicle

(NOTE: Medical payments cover passengers as well as the one insured and family.)

D. Consider dropping comprehensive and collision insurance when:

1. The car is paid for and there is no bank note
2. One can afford to repair the car from personal funds

3. One can do without the automobile if destroyed
4. The value of car is not more than the cost of comprehensive and collision premiums

(NOTE: All these factors should be considered and applied to each individual circumstance.)

VI. Items that influence automobile insurance premiums

A. Number of basic coverages one carries

B. Area one lives

C. Value and size of automobile

D. Age

E. Sex

(NOTE: Boys rates are higher than girls.)

F. Marital status

G. Distance one drives to work

H. Use of car - Business or pleasure

I. Driving habits of individuals

J. Claims paid on policy during past three year period

K. Rates must be similar for equal risks

L. Cost of repairs

(NOTE: Rates are set by each insurance company, and the insurance commission regulates these rates.)

VII. Ways to save on automobile insurance

A. Safe driver discount

(NOTE: Some companies give a ten to twenty percent discount on basic premiums to those with a three year record of no involvement in accidents where they were at fault or convicted of traffic violations.)

B. Driver education discount

(NOTE: Discount varies from company to company, but the course must meet national standards and be successfully completed.)

C. Two or more cars discount

VIII. Types of property insurance

A. Fire and extended coverage - Protects dwellings, farm buildings, and personal property against the perils of fire, lightning, wind, hail, explosion, riot, and civil commotion

(NOTE: Property does not have to be owner occupied.)

B. Homeowners - A package policy generally for town property that insures the dwelling, additional private structures, personal property such as household goods, and comprehensive personal liability; to qualify for this policy, the dwelling must be owner occupied

(NOTE: Homeowners insures against damage from fire, and extended coverage as described in item A, plus theft, vehicle damage, falling objects, weight of ice and snow, freezing of plumbing system, and hot water heater rupture.)

C. Farm owners - Same as homeowners plus optional coverages of farm barns and buildings, machinery, grain, hay, livestock, tools and equipment, and employer's liability

IX. Items that influence cost of property insurance

A. Amount of protection

B. Type of construction (wood or brick)

C. Location

D. Distance from fire department

E. Period of time covered

X. Basic rules for buying property insurance

A. Do not insure if financially able to do without or to replace with personal funds or if a loss would not hamper the farm operation

B. Insure if there is a loan against property under personal ownership

C. Write enough coverage to replace the loss

XI. Crop hail and federal crop insurance

A. Crop hail

1. An insurance company policy that protects against loss by hail or fire; optional coverage is loss by wind

2. The amount of loss payable is the amount of insurance multiplied by the percentage of damage

3. Damage percentage is determined by sampling methods that are agreeable to both parties

B. Federal crop insurance

1. Provides "all risk" crop investment insurance

2. Does not insure profit for the farmer or cover avoidable losses such as those caused by neglect or poor farming practices

3. Pays up to the guaranteed yield

(NOTE: If actual yield is as much as guarantee then no payment is made regardless of extent of loss.)

XII. Kind of life insurance policies

A. Term insurance

1. Covers the stated number of years of term that the policy is in effect
2. Usually does not accumulate any cash value
3. Insurance protection ends when the stated term expires
4. Used for business insurance protection,creditor's risk, and general family protection
5. For the time contracted, it is the cheapest form of life insurance
6. Chances of death increase with age, therefore policy rates are higher for each succeeding period
7. No guarantee of renewal
8. Group insurance is usually term insurance

B. Straight life insurance (Whole life or ordinary life)

1. Provides lifetime protection
2. Most widely used of all permanent life insurance
3. Costs less annually than any other kind of lifetime protection
4. Premiums are paid throughout the policyholder's lifetime
5. Policy accumulates a cash value
6. Policyholder may borrow the cash value of his policy

C. Limited payment life insurance

1. Provides lifetime protection
2. Premiums are paid only during a specified period of time
3. Fewer premiums are necessary so each one is larger
4. Accumulates cash value
5. Twenty year, or thirty year pay, or paid up at 65 are examples of limited payment life insurance

   (NOTE: Anyone having above average income for a few years might consider this type of insurance.)

D. Endowment life insurance

1. Policy puts emphasis on savings more than any other life insurance
2. Purpose is to accumulate a certain amount of money in a specified period, while providing life insurance
3. If policyholder lives, whole amount of policy is paid to him when endowment comes due

4. If policyholder dies before the period has elapsed, the full amount of the policy is paid to beneficiary
5. Expensive form of insurance for protection
6. Suits those who desire money for education, children, or during retirement

XIII. Instances when family income life insurance is needed most

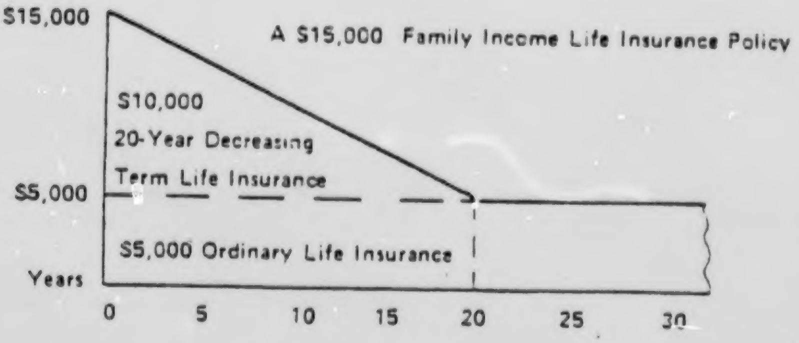
(NOTE: Combination of permanent life and decreasing term insurance.)

A. When there are small children to be reared or educated

B. While policyholder is paying off mortgage

Example: The chart below illustrates a common form of family income policy

(NOTE: If the policy shown had been in effect for fifteen years, the beneficiary would receive monthly income payments for the remaining five years of the policy.)



XIV. Factors that determine amount of life insurance needed

A. Family's income and net worth

B. Size of the family

C. Age and sex of the children

D. Skills and abilities of the wife and older children

E. Indebtedness of the family

F. Long-time goals including college education for the children

(NOTE: A qualified insurance agent is able to program one's insurance needs. Know the insurance agent and have confidence in him. There is usually a need for revision of your insurance needs.)

XV. Kinds of health insurance

A. Hospital-surgical-medical

1. Known as first dollar coverage with a small deductible clause

   Example: $20, $50, or $100 deductible

2. Usually has specified limits on room and board, hospital special charges, surgery, and out patient care

B. Major medical

1. Pays for expenses associated with a catastrophe and has a large deductible clause of from $100 to $1,000 but has a large benefit limit

   Example: $10,000 to $20,000

2. Usually covers most all expenses over the deductible with a possible limit on room, board, and surgery.

3. Has larger benefit period than hospital-surgical-medical

   Example: Three years

4. Major medical usually pays 80% for eligible expenses for the first one to five thousand dollars and 100% thereafter until maximum benefits are reached

C. Disability income

1. Pays a stated amount while a person is disabled because of injury or illness

2. Deductibles on disability income are called waiting periods

   (NOTE: This is the period between the start of disability and beginning of payment.)

3. Has different combinations of waiting periods

   (NOTE: Example: 0/0 means no waiting period for accident or sickness, 30/90 means 30 day waiting period for accidents and 90 day waiting period for sickness.)

4. Variations in length of benefit periods may be purchased

   Example: Life time benefits for accidents and five year
   benefits for sickness

5. Usually there are smaller benefits for partial disability

(NOTE: The hospital-surgical-medical, major medical, and disability income policies can be purchased in group plans, individual plans, and family plans. Many employers of larger firms provide group plans for employees.)

XVI. Features of workmen's compensation

A. In effect in all states

B. Employer must insure employees

C. Covers injury on the job

D. Covers illness as a result of job

E. Pays percentage of earnings while disabled

F. Pays accidental death benefits

G. Protects the employer regardless of who is negligent

H. Applies usually to firms with four or more full time employees

(NOTE: Dairys and feedlots with three or more employees may come under workmen's compensation.)

XVII. Kinds of work covered by social security

A. Almost every kind of employment and self employment

(NOTE: Some occupations are covered only if certain conditions are met.)

B. Self-employed farmers and ranchers

(NOTE: If net earnings from self-employment are $400 or more in a year.)

C. Farm employees--Social security credits are earned while working for a farmer, a ranch operator, or a farm labor crew leader

1. If the employer pays $150 or more in cash during the year for farm work

2. If farm work for the employer involves twenty or more days during the year for cash wages

XVIII. Benefits paid from social security (Transparency 1)

A. Monthly retirement benefits--Payable in full at age 65 with reduced benefits as early as age 62

B. Monthly survivor's benefits are payable to the following:

1. Widow at 62

2. Unmarried children under 18 (Under 22, if full-time student)

3. Children 18 or over if disabled before age 18

4. Widow at any age if she is caring for child under 18

5. Widow as early as age 50 if she has a severe disability

6. Dependent parents 62 or over

7. Dependent widower 62 or over

C. Monthly disability benefits--Payable to one before 65 with a severe disability that has lasted at least 12 months

D. Medicare--A two-part health insurance program for older people

E. Lump sum for funeral expenses payable to survivor at death of the person paying social security

XIX. Reasons social security payments stop

A. Marriage to one who is not covered by social security insurance payments

(NOTE: An exception is for the widow who remarries after reaching age 60.)

B. Divorce - All payments end if divorce is granted unless one is age 62 or older or if the marriage lasted at least thirty continuous years

C. No child "in her care"--Payment to wife under 62 stops when she no longer has a child under 18 or disabled

D. Child reaches 18--Payments stop unless he is disabled or a full-time unmarried student

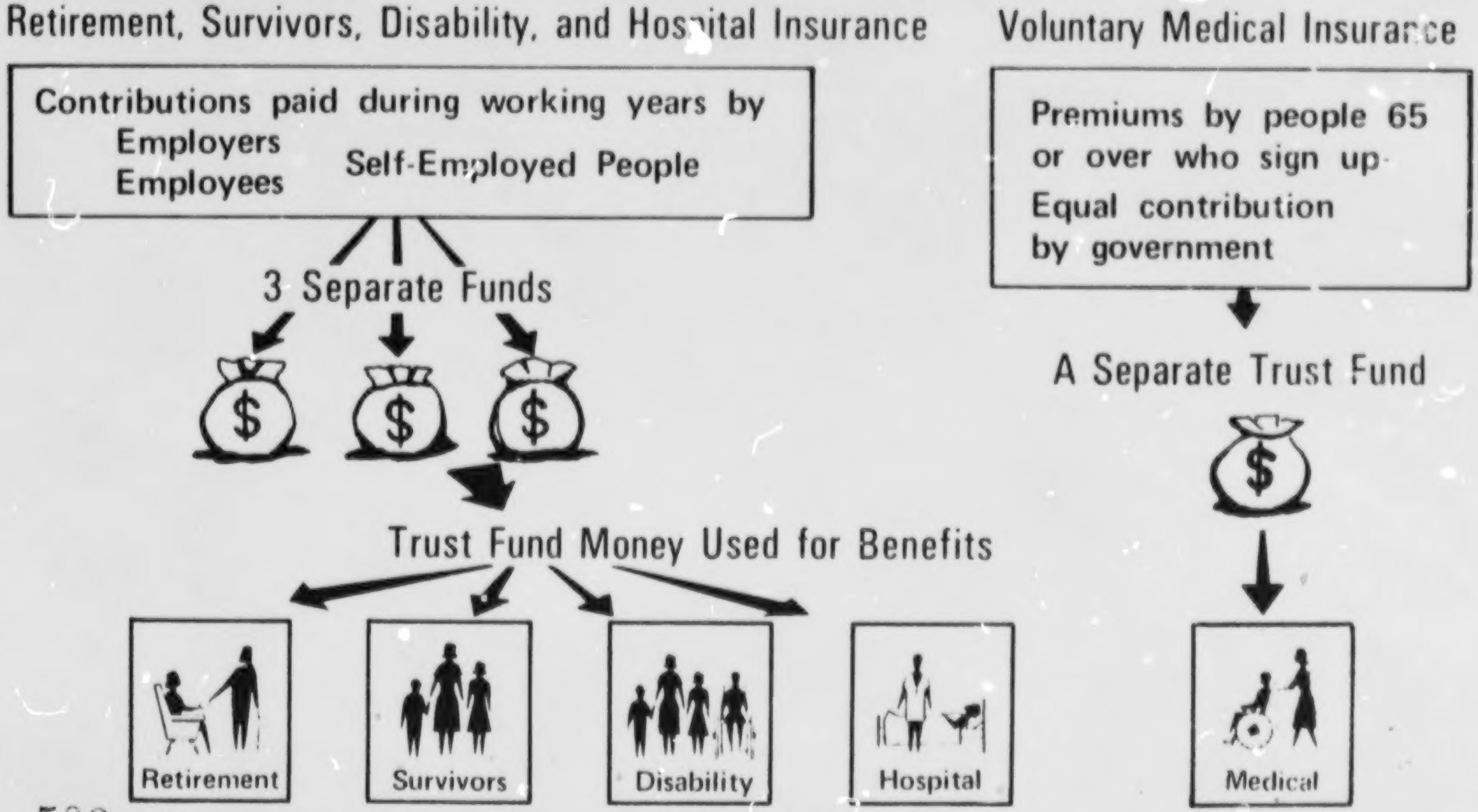
E. Adoption--Payments end unless person is adopted by stepparent, grandparent, aunt, uncle, brother, or sister

F. Death--Applies to any person receiving monthly benefits

G. Disability--If no longer disabled, payments stop to dependents

SOCIAL SECURITY

Where the Money Comes From, Where the Money Goes



Retirement, Survivors, Disability, and Hospital Insurance

Contributions paid during working years by
Employers
Employees
Self-Employed People

3 Separate Funds

Trust Fund Money Used for Benefits

Retirement
Survivors
Disability
Hospital

Voluntary Medical Insurance

Premiums by people 65 or over who sign up
Equal contribution by government

A Separate Trust Fund

Medical

INSURANCE
UNIT IV

ASSIGNMENT SHEET #1 - Evaluating Your Family Insurance Program

With the help of your parents, complete the following information in regard to your family insurance program.

1. Review of your automobile insurance.

Auto Description	Liability Limits	Medical	Comprehensive	Collision

a. Liability limits are the same on each vehicle. Yes____ No____

b. Liability limits are equal to family assets. Yes____ No____

c. Each vehicle has medical coverage Yes____ No____

d. Comprehensive and collision should be dropped on older vehicles. Yes____ No____

e. Comprehensive and collision should be added to one or more vehicles. Yes____ No____

f. All vehicles have liability coverage. Yes____ No____

g. Using the information and recommendations included in this unit, what changes would you recommend in the coverages of your family vehicles?

2. Review of your property insurance program

Description	Amount of Coverage
Dwelling	______________________
Contents	______________________
Garage	______________________
Barn	______________________
Other Building #1	______________________
Other Building #2	______________________
Other Building #3	______________________
Farm Liability or personal liability	______________________
Machinery	______________________
Tools	______________________
Livestock	______________________
Grain	______________________
Hay	______________________
Other:	______________________

a. Our property is fully insured Yes____ No____

(NOTE: To be fully insured and avoid co-insurance on the dwelling, it must be insured for at least eighty percent of replacement cost.)

b. In the event house and contents were lost to fire, insurance would replace same house, all clothes, furniture, appliances, books, etc.

Yes____ No____

c. All barns vital to farm operation are insured. Yes____ No____

d. All tools, machinery, hay, and grain vital to the farm operation are insured. Yes____ No____

e. Liability limits are adequate to protect farm or property in the event of a suit. Yes____ No____

f. Liability coverage includes protection for employees. Yes____ No____

g. Crop hail or federal crop insurance is used on our farm. Yes____ No____

h. Based on information and recommendations in this unit, what suggestions would you make in your family's property insurance coverages?

3. Review your family's life insurance program.

	Amount of Policy	Kind of Policy
Father		
Mother		
Yourself		
Brother		
Sister		

a. In event of death of your father, there would be enough cash, including life insurance proceeds, to pay all debts, funeral expenses, etc.

Yes____ No____

b. After paying debts and expenses, family income would be such to insure adequate education for all children.

Yes____ No____

c. Enough cash to pay state and federal estate taxes will be available in the event of death of mother or father.

Yes____ No____

d. Members of my family have term insurance coverage that should be converted to permanent coverage. Yes____ No____

4. Review of health insurance and social security.

a. All members of family are covered by health insurance. Yes____ No____

b. Hospital surgical type coverage is included in our policy.

Yes____ No____

c. Major medical coverage is included in our policy. Yes____ No____

d. At least one member of family is covered by disability income or workmen's compensation. Yes____ No____

e. My parents and I have recently checked our accounts with social security to verify the credit of all payments.

Yes____ No____

(NOTE: Any mistakes the social security administration has made during the past three years can be corrected. Mistakes not corrected within three years are lost.)

f. If answer to "e" was no, obtain from your postmaster a card which may be mailed to the social security administration for verification of your payments.

INSURANCE
UNIT IV

TEST

1. Match the following definitions with the terms on the right.
(NOTE: Answers to "a" through "m" are listed on this page.)

_____a. Insurance payable to the insured if living on maturity date or death prior to maturity

_____b. An accidental death benefit to pay double face amount in case of death by accident

_____c. The provision added to life insurance to pay premiums if totally and permanently disabled

_____d. Gives protection for a stated period of time and at the end of term is the termination of contract

_____e. Includes straight life, limited pay, and endowment

_____f. Written through lending institutions on lives of borrowers

_____g. A combination of several coverages or protections in one policy regarding home, personal property, and liability insurance

_____h. A combination of permanent life insurance and decreasing term insurance

_____i. When one is negligent and therefore liable for injury or damage caused to someone else

_____j. Act of congress which provides retirement and disability income and is funded by social security tax

_____k. When one is carrying part of the risk and is not fully insured

1. Endowment insurance
2. Disability benefit (Waiver of premium)
3. Double indemnity
4. Insurance
5. Premium
6. Family income life insurance
7. Credit insurance
8. Term life insurance
9. Permanent life insurance
10. Homeowner's policy
11. Liability
12. Co-Insurance
13. Social security

_____l. Spreads the risk of one person's misfortune among a large number of persons

_____m. The payment or consideration one makes as a policyholder in agreement with the policy for insurance

(NOTE: Answers to "n" through "bb" are listed on this page.)

_____n. Cash loaned on the cash value of policy at a specified interest rate

_____o. Term insurance exchanged at option of policyholder without evidence of insurability for another insurance plan

_____p. Amount available in cash upon voluntary termination of policy before death

_____q. A contract that provides an income for a specified period of time such as a number of years or for life

_____r. A statement of information made by a person applying for insurance

_____s. A provision authorizing the premium to be subtracted from policy cash values if not paid by the end of the grace period

_____t. Person named in the policy to receive proceeds at death of insured

_____u. Amount stated on the face of the policy that will be paid in case of death or at maturity

_____v. A period (usually 31 days) following the premium due date during which a premium may be paid without a penalty

14. Cash value
15. Automatic premium loan
16. Annuity
17. Application
18. Beneficiary
19. Convertible
20. Policy loan
21. Policy
22. Group insurance
23. Face amount
24. Loss payable clause
25. Grace period
26. Lapsed policy
27. Policy dividend
28. No fault insurance

_____w. Insurance which is usually issued without medical examination on a group of persons under a single master contract

_____x. A policy terminated for nonpayment of premium

_____y. Document stating terms of contract that is issued to policyholder by the company

_____z. A refund of part of the premium on participating policies plus interest

____aa. Names the mortgage company on the policy whereby any claim is payable to mortgage company up to the amount of mortgage

____bb. In regard to auto insurance, everyones' company will pay for their own damage and injury

2. Match the following definitions of liability insurance with the terms on the right.

_____a. Pays the employee's medical expense regardless of who is negligent

_____b. Similar to public liability but is designed specifically for farmers

_____c. Protects policyholder from lawsuits by members of the public who suffer property or bodily injury caused by his negligence

_____d. Protects employer when he is liable for on-the-job accidents caused by his negligence

1. Public liability
2. Employer's liability
3. Workmen's compensation
4. Farmer's comprehensive libabiltiy

3. Match the basic auto coverages with the terms on the right.

_____a. Insurance pays for damages to one's car regardless of the burden of negligence

1. Protection against uninsured motorist

_____b. Pays for any medical, dental, hospital, nursing, or funeral expenses incurred as the result of an auto or truck accident involving the insured vehicle regardless of fault

_____c. Protects the policyholder financially if he or a member of his family injures someone while operating his vehicle

_____d. Protects the policyholder financially if he or a member of his family damages someone's automobile or other property

_____e. Insures auto against glass breakage, theft, and all weather elements

_____f. Coverage for holder to recover loss for bodily injury caused by a person having no liability insurance

2. Bodily injury liability

3. Property damage liability

4. Medical reimbursement

5. Comprehensive physical damage

6. Collision

4. Explain in writing what is meant by a 10-20-5 automobile liability policy.

5. Select from the list below the factors that determine what automobile coverages to buy. Place an "X" by the correct factors.

_____a. Liability insurance would be purchased for every licensed vehicle

_____b. Liability limits should be less on automobiles not used very often

_____c. It is not advisable to carry medical insurance on every vehicle

_____d. Consider dropping comprehensive and collision insurance when able to afford repair on the car from personal funds

6. Select from the list below those items that influence automobile insurance premiums. Place an "X" by the correct items.

_____a. Number of basic coverages one carries

_____b. Area one lives

_____c. Name of car manufacturer

_____d. Age

_____e. Sex

_____f. Height

_____g. Driving habits of individuals

7. List two ways to save on automobile insurance.

   a.

   b.

8. Match the types of property insurance on the right with the proper definition.

   _____a. A package policy generally town property that insures the dwelling, additional property such as household goods, and comprehensive personal liability; to qualify for this policy, the dwelling must be owner occupied

   _____b. Protects dwelling, farm buildings, and personal property against the perils of fire, lightning, wind, hail, explosion, riot, and civil commotion

   _____c. Same as homeowners plus optional coverages of farm barns and buildings, machinery, grain, hay, livestock, tools and equipment, and employer's liability

   1. Fire and extended coverage

   2. Homeowners

   3. Farm owners

9. Select from the list the items that influence the cost of property insurance. Place an "X" by the correct items.

   _____a. Amount of protection

   _____b. Type of construction (wood or brick)

   _____c. Age of people living on property

   _____d. Distance from fire department

   _____e. Marital status of applicant

10. Name two basic rules to use when buying property insurance.

a.

b.

11. Distinguish between crop hail and federal crop insurance by writing crop hail or federal crop as it applies to the following statements.

a. ________________________ Pays up to the guaranteed yield

b. ________________________ An insurance company policy that protects against loss by hail or fire; optional coverage is loss by wind.

c. ________________________ The amount of loss payable is the amount of insurance multiplied by the percentage of damage.

d. ________________________ Provides "all risk" crop investment insurance.

e. ________________________ Damage percentage is determined by sampling methods that are agreeable to both parties.

f. ________________________ Does not insure profit for the farmer or cover avoidable losses such as those caused by neglect or poor farming practices.

12. Match the characteristics on the left with the correct kind of life insurance on the right.

(NOTE: These terms can be used more than once.)

_____a. Covers the stated number of years or term that the policy is in effect

_____b. Premiums are paid throughout the policyholder's lifetime

_____c. Premiums are paid only during a specified period of time; provides lifetime protection

_____d. No guarantee of renewal

_____e. Policy puts emphasis on savings more than any other life insurance

_____f. Expensive form of insurance for protection

_____g. Most widely used of all permanent life insurance

1. Term insurance

2. Limited payment life insurance

3. Endowment life insurance

4. Straight life insurance

13. Discuss in writing instances when a family income life insurance policy would be needed most.

14. Select from the list below the factors that determine the amount of life insurance needed. Place an "X" by the proper factors.

_____a. Size of the family

_____b. Age and sex of children

_____c. Indebtedness of the family

_____d. Location within the state

_____e. Race

15. Match the kind of health insurance on the right with the proper definition.

(NOTE: These terms can be used more than once.)

_____a. Pays for expenses associated with a catastrophe and has a large deductible clause of from $100 to $1000 but has a large benefit limit

_____b. Known as first dollar coverage with a small deductible clause

_____c. Pays a stated amount while a person is disabled because of injury or illness

_____d. Usually pays 80% for eligible expenses for the first one to five thousand dollars and 100% thereafter until maximum benefits are reached

_____e. Usually has specified limits on room and board, hospital special charges, surgery, and out patient care

1. Hospital-surgical-medical

2. Major medical

3. Disability income

16. Select from the list below the features of workmen's compensation for those who qualify. Place an "X" by the statement.

_____a. Employer must insure employees

_____b. Covers injury on the job

_____c. Pays percentage of earnings while disabled

_____d. Usually applies to firms with two full time employees

_____e. Pays death benefits regardless of cause

_____f. Protects the employee unless he is negligent

17. Select from the list below the kinds of work covered by social security. Place an "X" by correct answers.

_____a. Almost every kind of employment and self-employment

_____b. Farm employee working fifteen days for a farmer and receiving $140.00 for this work

_____c. Self-employed farmers and ranchers

18. Select from the list below the benefits that are paid from social security funds. Place an "X" by the correct statements.

_____a. Monthly survivors benefits to a widow at age 62

_____b. Monthly survivors benefits to a widow at any age if she is caring for a child under 18

_____c. Full benefits for retirement at age 62

_____d. Medicare--A two-part health insurance program for older people

19. Select from the list below the reasons social security payments stop. Place an "X" by the correct answers.

_____a. All payments end if divorce is granted unless one is age 62 or older or if the marriage lasted at least thirty continuous years

_____b. Payments to wife under 62 stop when she no longer has a child under 24 or disabled

_____c. When a person is no longer disabled, payments stop to dependents

_____d. When a dependent child reaches 18, payments stop even if he is a full time student _____e. Payments stop whenever a dependent child is adopted unless adopted by stepparent, grandparent, aunt, uncle, brother, or sister

20. Evaluate a family insurance program and recommend needed changes.

(NOTE: If this activity has not been accomplished prior to this test, ask the instructor when this is to be completed.)

INSURANCE
UNIT IV

ANSWERS TO TEST

1. a. 1
   b. 3
   c. 2
   d. 8
   e. 9
   f. 7
   g. 10
   h. 6
   i. 11
   j. 13
   k. 12
   l. 4
   m. 5
   n. 20
   o. 19
   p. 14
   q. 16
   r. 17
   s. 15
   t. 18
   u. 23
   v. 25
   w. 22
   x. 26
   y. 21
   z. 27
   aa. 24
   bb. 28

2. a. 3
   b. 4
   c. 1
   d. 2

3. a. 6
   b. 4
   c. 2
   d. 3
   e. 5
   f. 1

4. a. Ten indicates insured person is protected against damages up to $10,000 for one person
   b. Twenty means insured person is protected against damages up to $20,000 for two or more persons injured in one accident
   c. The five indicated insured person is protected against property damage to others up to $5,000

5. a
   d

6. a
   b
   d
   e
   g

7. Any two of the following:
   a. Safe driver discount
   b. Driver education discount
   c. Two or more cars discount

8. a. 2
   b. 1
   c. 3

9. a
   b
   d

10. Any two of the following:

    a. Do not insure if financially able to do without or to replace with personal funds, or if a loss would not hamper the farm operation

    b. Insure if there is a loan against property under personal ownership

    c. Write enough coverage to replace the loss

11. a. Federal crop
    b. Crop hail
    c. Crop hail
    d. Federal crop
    e. Crop hail
    f. Federal crop

12. a. 1
    b. 4
    c. 2
    d. 1
    e. 3
    f. 3
    g. 4

13. When there are small children to be educated or reared or while policyholder is paying off mortgage

14. a
    b
    c

15. a. 2
    b. 1
    c. 3
    d. 2
    e. 1

16. a
    b
    c

17. a
    c

18. a
    b
    d

19. a
    c
    e

20. Evaluated to the satisfaction of the instructor.

AGRICULTURAL SUPPLY AND SERVICE BUSINESS ORGANIZATIONS

TERMINAL OBJECTIVE

After completion of this unit, the student should be able to match the types of ownership to their correct description, and the types of organization patterns to their definitions. He/she should also be able to select from a list standards for advancement. The student should be able to name contributions made, factors needed, and functions of agricultural supply and service firms. This knowledge will be evidenced by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit,the student should be able to:

1. Match the types of ownership to the description.
2. Match the types of organizational patterns to the definition.
3. Select from a list standards for advancement of the employee.
4. List five contributions supply and service firms make to the local community.
5. Name four factors needed to make an agricultural supply and service firm productive.
6. List three functions of agricultural supply and service firms.
7. Complete a business structure worksheet.

AGRICULTURAL SUPPLY AND SERVICE
BUSINESS ORGANIZATIONS

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide student with objective sheet
- B. Provide student with information and assignment sheet
- C. Make transparencies
- D. Disucss terminal and specific objectives
- E. Discuss information and assignment sheet
- F. Give test

II. Student:

- A. Read objectives
- B. Study Information sheet
- C. Complete assignment sheet
- D. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

- A. Objective sheet
- B. Information sheet
- C. Transparency masters
  1. TM 1 - The Wheel Pattern
  2. TM 2 - The Line or Military Pattern
  3. TM 3 - The Line and Staff Pattern
- D. Assignment Sheet #1 - Business Structure Worksheet
- E. Answers to assignment sheet
- F. Test
- G. Answers to test

II. Reference:

- A. Opportunities in Agricultural Opportunities and the Employee within the Business Organization. Agricultural Education Services, Ohio State University, 1971.

AGRICULTURAL SUPPLY AND SERVICE
BUSINESS ORGANIZATIONS

INFORMATION SHEET

I. Types of ownerships

   A. Private ownership

      1. Business is owned by one person
      2. All decisions and policies are made by the owner
      3. Profits are enjoyed by the owner
      4. Responsibility to supply the necessary capital rest with the owner
      5. Liability of the business rests upon the owner

   B. Partnerships

      1. Business is owned by the partners, who share in ownership and management
      2. Two or more people are able to invest more capital jointly in a business venture
      3. Profits are enjoyed by the owners
      4. In case of business failure all partners may be liable to the extent of their partnership

         (NOTE: Liabilities differ with limited partnerships.)

   C. General corporations

      1. Businesses that require more capital than one or two people have to invest, many people are given the opportunity to invest in the company in smaller amounts
      2. Ownership is by shares of stock
      3. Business is operated and policy is determined by an elected board of directors

         (NOTE: This board employs a president, secretary, treasurer, and other officers to manage the business.)

      4. Capital for the business comes from the sale of stock and and from returns from goods and services provided
      5. Voting by stockholders and dividends paid to the stockholders are in proportion to their ownership
      6. Services and goods provided by a regular business coporation are, for the most part, not primarily for the stockholders but are for the general public
      7. In a business failure the corporation is liable to the full extent of its assets

         (NOTE: Each stockholder, however, cannot lose more than he has invested in stock.)

8. There is a heavy taxation

   (NOTE: The profits of the corporation are taxed for income taxes. What profits are left after taxes have been paid are distributed to the stockholders in the form of dividends. There may be a tax advantage in different types of coporations.)

D. Cooperative corporation

1. Formed mainly for the members with whom to do business
2. Formed primarily to serve its members
3. Basic policy is determined at general meetings open to all the members
4. Members elect a board of directors who make the management decisions
5. Each member has one vote, regardless of the number of shares of stock that he owns
6. Excess net margin from the business is returned to members (owners) as patronage refunds
7. Members pay the tax on the earning of the company
8. Members of the cooperative are often production people and not skilled in the business trades

II. Common types of organizational patterns

A. Wheel pattern (transparency 1)

1. Common in small businesses with only one owner and several employees, also in other types of small businesses such as partnerships
2. The authority is concentrated in one person
3. Because of the small number of employees in the business, each may have to do several different functions

B. Line or military pattern (Transparency 2)

1. Each employee (except for the lowest rank) supervises one or more employees
2. Each employee is responsible to only one supervisor
3. Manager is responsible to the owners or the board of directors

C. Line and staff pattern (Transparency 3)

1. Similar to the line pattern except that it includes staff employees
2. Staff employee is frequently called an administrative assistant and responsible to only a high-ranking official
3. Staff employer generally has no employees that he supervises

III. Factors for advancement of the employee
   A. Good attitude
   B. Seniority
   C. Knowledge of present job
   D. Quality of work
   E. Quantity of work
   F. Initiative
   G. Perserverance
   H. Cooperativeness and goodwill
   I. Ability to think
   J. Adaptability
   K. Adequacy of training

IV. Contributions that supply and service firms make to the local community
   A. Materials
   B. Services
   C. Information regarding agricultural products and techniques
   D. Jobs for local employees
   E. Taxes
   F. Public relations and support activities

V. Factors needed to make an agricultural supply and service firm productive
   A. Labor
   B. Capital
   C. Management
   D. Natural resources

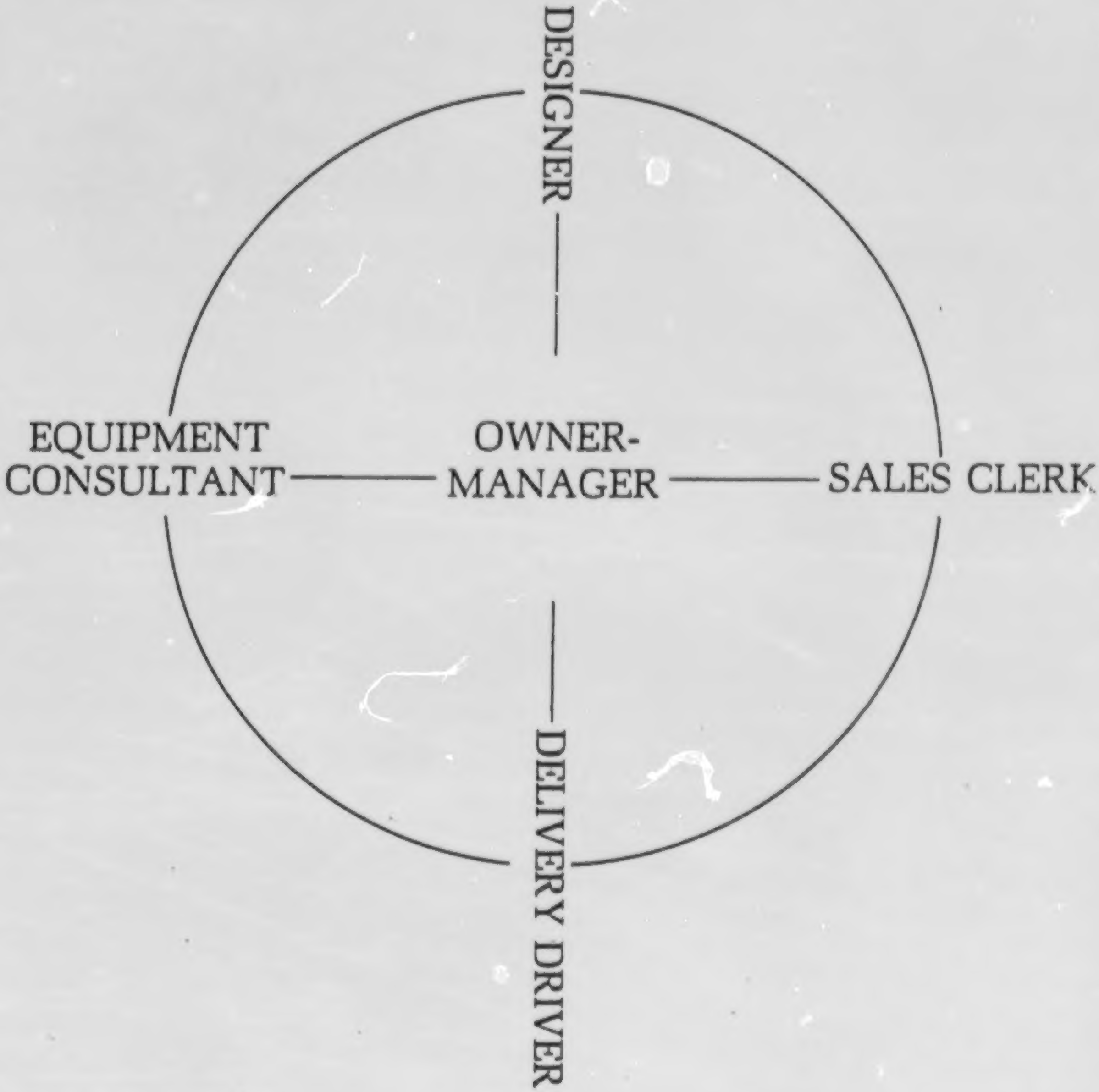
VI. Functions of agricultural supply and service firms
   A. Exchange functions
      1. Purchasing
      2. Selling

   B. Physical functions
      1. Transporting
      2. Storing
      3. Processing and packaging

C. Facilitating Functions

1. Standardizing, sorting, grading
2. Financing and extending credit
3. Risk-taking
4. Providing market information and research information

THE WHEEL PATTERN



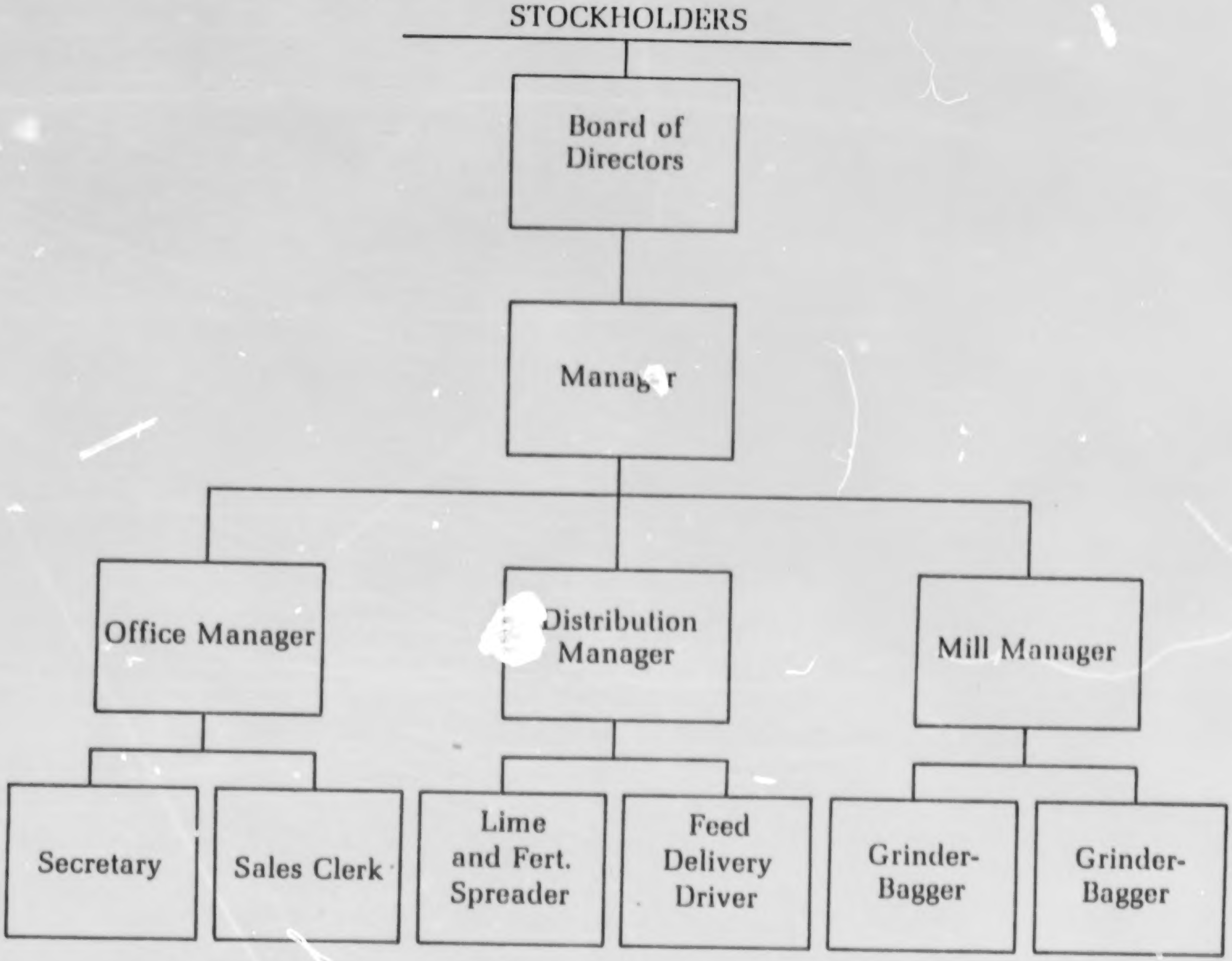
DESIGNER

EQUIPMENT CONSULTANT

OWNER-MANAGER

SALES CLERK

DELIVERY DRIVER



STOCKHOLDERS

Board of Directors

Manager

Office Manager

Distribution Manager

Mill Manager

Secretary

Sales Clerk

Lime and Fert. Spreader

Feed Delivery Driver

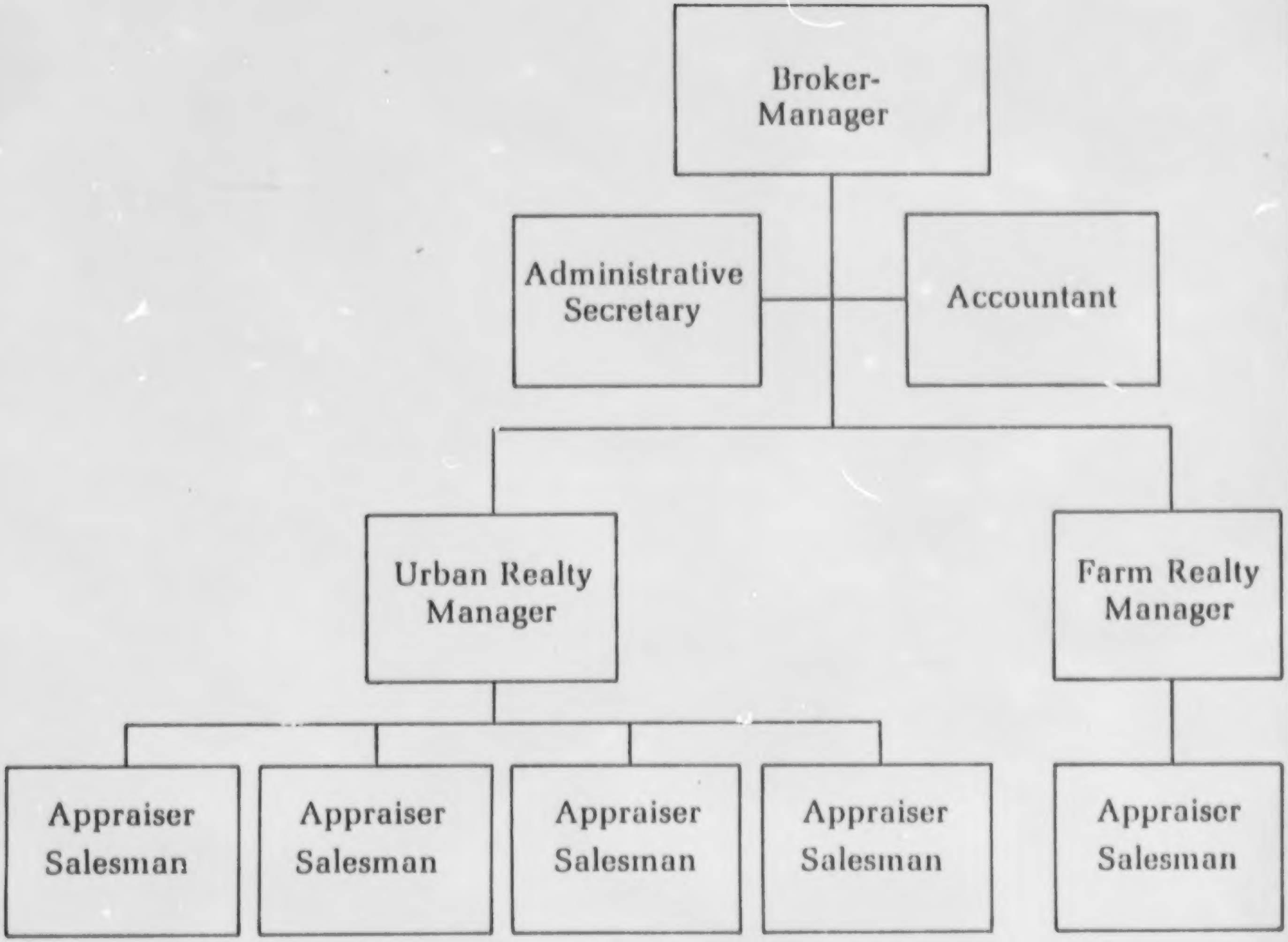
Grinder-Bagger

Grinder-Bagger

TM 2

THE LINE OR MILITARY PATTERN

THE LINE AND STAFF PATTERN



Broker-Manager
Administrative Secretary
Accountant
Urban Realty Manager
Farm Realty Manager
Appraiser Salesman
Appraiser Salesman
Appraiser Salesman
Appraiser Salesman
Appraiser Salesman

ANSWERS TO ASSIGNMENT SHEET #1--BUSINESS STRUCTURE WORKSHEET

BUSINESS STRUCTURE WORKSHEET

TYPES OF BUSINESSES	FEATURES COMPARED			
	PRIVATE OWNERSHIP	PARTNERSHIP	GENERAL CORPORATION	COOPERATIVE CORPORATION
Who Owns the Business	Owner	two or more people	many people by shares of stock	members to whom they do business
How is Voting Conducted	—	equally	by stockholder in proportion to number of stocks owned	each member has one vote
Who Manages the Company	Owner	partners	a paid president	a paid manager
Who Gets the Profits	Owner	partners	Stockholders	to members
How are Profits Distributed	—	equally	to stockholder in form of dividends	as patronage refunds
How are Taxes Paid	By Owner	By the partners	from the profits made	member pays the tax on the earning

ASSIGNMENT SHEET #1--COMPLETING A BUSINESS STRUCTURE WORKSHEET

Directions: Using the information sheet fill in the blanks.

BUSINESS STRUCTURE WORKSHEET

TYPES OF BUSINESSES	FEATURES COMPARED			
	PRIVATE OWNERSHIP	PARTNERSHIP	GENERAL CORPORATION	COOPERATIVE CORPORATION
Who Owns the Business				
How is Voting Conducted				
Who Manages the Company				
Who Gets the Profits				
How are Profits Distributed				
How are Taxes Paid				

AGRICULTURAL SUPPLY AND SERVICE
BUSINESS ORGANIZATIONS

TEST

1. Match the following descriptions of ownership with the four terms on the right. (NOTE: Terms can be used more than once.)

_____a. Business is owned by the partners, who share in ownership and management

_____b. Ownership is by shares of stock

_____c. Formed primarily to serve its members

_____d. Business is owned by one person

_____e. Members are often production people and not skilled in the business trades

_____f. Capital for business comes from the sale of stock and from the return from goods and service provided

_____g. Profits are enjoyed by the owners

_____h. Two or more people are able to invest more capital jointly in a business venture

_____i. Liability of the business rests upon the owner

_____j. Formed mainly for the members with whom to do business

_____k. In a business failure the corporation is liable to the extent of its assets

_____l. All decisions and policies are made by the owner

_____m. There is a heavy taxation

_____n. Services and goods are not primarily for the stockholders but for the public

1. Private ownership
2. General corporation
3. Cooperative corporation
4. Partnerships

_____o. Responsibility to supply the necessary capital rest with the owner

_____p. Profits are enjoyed by the owner

_____q. In case of failure all partners may be liable to the extent of their partnership

_____r. Voting by stockholder is in proportion to ownership

_____s. Basic policy is determined at general meetings

_____t. Members elect a board of directors who make the management decisions

_____u. Business is operated and policy is determined by an elected board of directors

_____v. Business that requires more capital than one or two people have to invest

_____w. Each member has one vote regardless of the number of shares of stock he owns

_____x. Members pay the tax on the earning of the company

_____y. Excess net margin from the business is returned to members as patronage refunds

1. Private ownership
2. General corporation
3. Cooperative corporatio
4. Partnerships

2. Match the following definitions of organization patterns with the three terms on the right. (NOTE: Terms can be used more than once.)

_____a. Employer generally has no employees that he supervises

_____b. Manager is responsible to the owners or the board of directors

_____c. Includes staff employees

_____d. Common in small businesses with only one owner and several employees

_____e. Employee is frequently called an administrative assistant

1. Wheel pattern
2. Line or military pattern
3. Line and staff pattern

_____f. Each employee may have to do several different functions

_____g. Each employee (except for the lowest in rank) supervises one or more employees

_____h. Authority is concentrated in one person

_____i. Each employee is responsible to only one supervisor

1. Wheel pattern
2. Line or military pattern
3. Line and staff pattern

3. Select the factors for advancement of the employee by placing an "X" in the appropriate blanks.

_____a. Seniority
_____b. Adaptability
_____c. Stubbornness
_____d. Expensive clothes
_____e. Adequacy of training
_____f. Quality of work
_____g. Knowledge of present job
_____h. Ability to think
_____i. Car
_____j. Perseverance
_____k. Quantity of work

4. List 5 contributions supply and service firms make to the local community.

a.

b.

c.

d.

e.

5. Name four factors needed to make an agricultural supply and service firm productive.

a.

b.

c.

d.

e.

6. List three functions of agricultural supply and service firms.

   a.

   b.

   c.

AGRICULTURAL SUPPLY AND SERVICE
BUSINESS ORGANIZATIONS

ANSWERS TO TEST

1. a. 4
   b. 2
   c. 3
   d. 1
   e. 3
   f. 2
   g. 4
   h. 4
   i. 1
   j. 3
   k. 2
   l. 1
   m. 2
   n. 2
   o. 1
   p. 1
   q. 4
   r. 2
   s. 3
   t. 3
   u. 2
   v. 2
   w. 3
   x. 3
   y. 3

2. a. 3
   b. 2
   c. 3
   d. 1
   e. 3
   f. 1
   g. 2
   h. 1
   i. 2

3. a, b, e, f, g, h, j, k

4. Any five of the following:
   a. Materials
   b. Services
   c. Information regarding agricultural products and techniques
   d. Jobs for local employees
   e. Taxes
   f. Public relations and support activities

5. a. Labor
   b. Capital
   c. Management
   d. Natural resources

6. a. Exchange functions
   b. Physical functions
   c. Facilitating functions

CAREER SELECTION/
PUBLIC RELATIONS

SALESMANSHIP
UNIT I

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to list the duties of a salesperson, describe how to deal with different customer situations, distinguish between the do's and don'ts of closing a sale and demonstrate the ability to determine the needs of a customer. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match stages of a sale to their explanation.
2. List three phases of a good sales presentation.
3. Select from a list basic types of selling.
4. Select from a list basic buying decisions of a customer.
5. Select from a list basic traits of a successful salesperson.
6. Match the five basic steps in selling to their explanation.
7. List eight duties of a salesperson.
8. Distinguish between the do's and don'ts of closing a sale.
9. Complete a product information sheet.
10. Determine solutions in case studies involving working with people.
11. Complete personality rating scale.

SALESMANSHIP
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

- A. Provide student with objective sheet.
- B. Provide student with information and assignment sheets.
- C. Discuss unit and specific objectives.
- D. Discuss information and assignment sheets.
- E. Have the students complete two selling demonstrations in class using the sales presentation worksheet.
- F. Have the class divide into groups and react to different customer situations.
- G. Have the students discuss the selling features of some sell-known product.
- H. Have a first-rate salesperson give a sales demonstration.
- I. Have the student conduct individual selling demonstrations to the class.
- J. Divide the class into groups and discuss different situations involving customer needs.
- K. Discuss individual personality rating.
- L. Visit a complaint department and talk with the person in charge.
- M. Give test.

II. Student:

- A. Read objectives.
- B. Study information sheet.
- C. Complete assignment sheets.
- D. Take test.

INSTRUCTIONAL MATERIALS

I. Inlcuded in this unit:

- A. Objectives
- B. Information Sheet

C. Assignment sheets

    1. Assignment Sheet #1 - Product Information
    2. Assignment Sheet #2 - Working with People
    3. Assignment Sheet #3 - Working with People
    4. Assignment Sheet #4 - Personality Rating Scale

D. Test

E. Answers to test

II. References:

A. Basic Salesmanship. Ernest, John W., OMPM, McGraw-Hill, 1969.

B. Creative Selling. Ernest, John W., OMPM, McGraw-Hill, 1969.

C. Human Relations in Business. Education Services, Ohio State University, 1971.

D. Distributive Education Classroom and School Store Facilities. Slides and cassette, Instructional Materials Laboratory, University of Missouri-Columbia, 1975.

SALESMANSHIP
UNIT I

INFORMATION SHEET

I. Stages of a sale
   - A. Attention stage - Prospect becomes aware of a need
   - B. Interest stage - Prospect becomes interested in doing something about the need
   - C. Desire stage - Prospect wants to do something that will satisfy the need
   - D. Conviction stage - Prospect becomes convinced that a particular product or course of action will satisfy the need
   - E. Action stage - Prospect takes action to satisfy the need--in other words, buys the product or service

II. Phases of a good sales presentation
   - A. Approach
   - B. Demonstration
   - C. Close

III. Basic types of selling
   - A. Retail
   - B. Industrial
   - C. Wholesale

IV. Basic buying decisions of the customer
   - A. Why should I buy
   - B. What type, brand or style should I buy
   - C. Where should I buy
   - D. How much should I buy
   - E. When should I buy

V. Traits of a successful salesperson
   - A. Confidence
   - B. Perserverance
   - C. Comprehensiveness
   - D. Reliability

E. Tact

F. Loyalty

G. Enthusiasm

H. Leadership

I. Conversational ability

J. Oral expression

K. Poise

L. Grooming

M. Honesty

VI. Basic steps in selling

A. Approach - Welcoming or meeting the customer

B. Talking points - Determining the customer's needs

C. Demonstration - Demonstrating the merchandise

D. Related items, products benefits and substitution - Overcoming sales resistance

E. Closing - Closing the sale

VII. Duties of a salesperson

A. Prospecting

B. Conducting sales interviews

C. Closing sales

D. Servicing

E. Following-up

F. Handling complaints

G. Administering credit programs

H. Performing other duties common to all employees

VIII. Do's and don'ts of closing a sale

A. Do display a friendly manner at the close, even though there is disagreement between the customer and the salesperson

B. Do be sure to have all materials and equipment that will be needed

(NOTE: Misplaced order blanks, obsolete price lists, and dry fountain pens can lose sales.)

C. Do realize that begging for a sale makes the salesman and product look bad - it also disgusts the customer

D. Do ask the customer to "OK" or approve the order rather than sign it

E. Do make buying as easy and painless as possible

F. Do try for privacy at the close

(NOTE: Phone calls and third parties distract.)

G. Do study each customer as a baseball pitcher studies each batter

(NOTE: Then pitch to his weakness.)

H. Don't let the customer know how much the sale means

I. Don't be apologetic, particularly in quoting prices

J. Don't make written or oral promises unless authorized to do so; otherwise there will be friction and expense

K. Don't make a ceremony out of closing

L. Don't give the customer an excuse or an opportunity to back away from the purchase

M. Don't ever ask the customer for the buying decision in such a way that he can answer with a "Yes" or a "No", for the latter closes the door

N. Don't make it difficult for the customer to complete his purchase quickly, if he cares to do so

SALESMANSHIP
UNIT I

ASSIGNMENT SHEET #1 - PRODUCT INFORMATION

Directions: Pick a product from a local store and fill in the assignment sheet.

Product: ____________________

Use of the product: ____________________

____

How the product works: (or how used?) ____________________

____

What the product is made of: ____________________

____

____

How the product is made: ____________________

____

____

Instructions for using: (safety, etc.) ____________________

____

____

Who is manufacturer: ____________________

Storage of product: ____________________

____

Maintenance of product: (if not consumable) ____________________

____

____

Packaging: (sizes and material) ____________________

____

____

Comparable items: ______________________________

SALESMANSHIP
UNIT I

ASSIGNMENT SHEET #2 - WORKING WITH PEOPLE

Directions: Complete the reading assignment and then answer the following questions.

Jack Dawson is a salesman for the Quality Seed Company. He really feels that he is an above-average salesman and that he has a good knowledge of sales techniques, but he does not seem to be getting anywhere. He barely met his quota in his territory last month, and he seems to have trouble selling to the big potential customers. Just the other day he lost a big order to Sam Bronson, who works for the ABC Seed Company. Jack knows he has a better product than Sam, but he just does not seem to get the breaks.

Jack had a heart-to-heart talk with his sales manager, but all the sales manager could say to him was, "Jack, you've got to do it yourself. This game of selling is rough. It takes a real man to rise above the others and land those big orders. I know you can do it, because I feel you are a good salesman."

Jack was the star quarterback for his high school football team. His team won the conference three years in a row, and Jack won the conference "Most Valuable Player" award. Jack remembers how those pep talks in the locker room helped when a guy was down. His old ball team depended upon the coach to raise their enthusiasm and build up their strength, and then they went out to win in the second half. Jack wonders why his sales manager cannot be like that coach.

A. Identify the problem.

____

____

____

B. What are the important facts to be considered in this problem?

____

____

____

____

C. List several possible solutions (from every point of view).

____

____

____

____

____

D. Evaluate the possible results of each solution.

____

____

____

____

____

____

E. Which solution do you recommend? Why?

____

____

____

____

____

SALESMANSHIP
UNIT I

ASSIGNMENT SHEET #3 - WORKING WITH PEOPLE

Directions: Complete the reading assignment and answer the following questions.

Jack Whipple sells for a well-known feed company. He finds that he is spending over 75 percent of his time prospecting, leaving only 25 percent for actual selling.

Jack hired a young man whose time is worth considerably less than his own. The junior salesman spends all his time canvassing for prospects. Jack has provided his young associate with a written copy of the sales talk he uses with his "hot" prospects. Jack also has his junior salesman accompany him on a number of calls so that the young man can learn "how it's done." Jack has made it clear to the young man that when he finds a prospect, his job is to set up an appointment for Jack, who will keep the appointment and attempt to make a complete sales presentation and close the sale. Jack has agreed to pay his associate 20 percent of the commissions earned on completed sales.

Jack figured that this system of prospecting would net him three times as much selling time as he previously had and that he ought to be able to close four times as many sales. However, it does not seem to be working out that way. The leads furnished by the junior salesman are difficult to close. A number of prospects have told Jack that they already have heard the story about the product. All they want to know about is the price. Some of the prospects mistakenly thought that it was lower in price than actually quoted.

The young man is getting discouraged. He does not seem to be getting what he thought would be a fair number of prospects out of his canvassing efforts. He complained to Jack, "When I do get to a farm, I find even after spending an hour there that I get turned down too many times."

A. Identify the true problem.

____

____

____

B. What are the important facts to be considered in this problem?

C. List several possible solutions (from every point of view).

D. Evaluate the possible results of each solution.

E. Which solution do you recommend? Why?

SALESMANSHIP
UNIT I

ASSIGNMENT SHEET #4 - PERSONALITY RATING SCALE

Directions: The purpose of this scale is to help you form an opinion of your sales personality and rate yourself on thirteen (13) important qualities of an effective salesperson. Be as objective as possible. Place an "X" in the appropriate blank.

1. Confidence

To what extent do you succeed in winning the confidence, respect and goodwill of your friends and classmates?

____Exceptionally successful

____Usually successfuly

____About 50-50

____Seldom

____Never

2. Perseverance

To what extent are you capable of sustained effort (staying at a task until it is finished)?

____Always stick with it

____Sometimes discouraged

____Easily discouraged

____Seldom

____Never

3. Comprehension

How alert are you at grasping an idea or situation (catching on)?

____Extremely reliable

____Most of the time

____About 50-50

____Seldom

____Never

4. Reliability

How reliable (dependable) are you in performing your work?

____Thoroughly reliable

____Ordinarily reliable

____About 50-50

____Seldom

____Never

5. Tact

To what extent do you say or do things without hurting the feelings or incuring the ill opinion of others?

_____Always tactful

____Generally tactful

____About 50-50

____Seldom

____Offend others constantly

6. Loyalty

Do you stand behind your employer and stand up for what you believe is right?

____Always loyal

____Usually loyal

____Hesitant

____Give up easily

____Never stand firm

7. Enthusiasm

How enthusiastic are you in undertaking a task or an assignment?

____Exceedingly enthusiastic

____Mildly enthusiastic

____So-so

____Often resentful

____Always resentful

8. Leadership

How well can you lead, direct or influence others?

____Can lead forcefully

____Lead most of the time

____About 50-50

____Usually avoid leadership

____Always avoid leadership

9. Conversational ability

To what extent do you particpate in conversations with others?

____Wholeheartedly

____Quite a bit

____To a certain extent

____Scarcely at all

____Never

10. Oral expression

How well do you use the English language?

____Exceptionally well

____Better than average

____About average

____Poorly, make many errors

____Very poorly, hard to understand

11. Poise

To what extent are you poised (maintain self-control)?

____Exceptionally well poised

____Usually well poised

____About average

____Lose control frequently

____Rarely poised

12. Grooming

To what extent do you maintain a neat and well-groomed appearance?

____Always

____Usually

____About 50-50

____Careless, often sloppy

____Rarely

13. Honesty

To what extent are you honest?

_____Always

_____Usually

_____About 50-50

____Never

____Rarely

SALESMANSHIP
UNIT I

TEST

1. Match the stages of the sale (right-hand column) to their explanation (left-hand column) and place the correct number in the blank provided.

_____a. Prospect takes action to satisfy the need

_____b. Prospect becomes convinced that a particular product or course of action will satisfy the need

_____c. Prospect wants to do something that will satisfy the need

_____d. Prospect becomes interested in doing something about that need

_____e. Prospect becomes aware of a need

1. Desire stage
2. Attention stage
3. Action stage
4. Interest stage
5. Conviction stage

2. List three phases of a good sales presentation.

a.

b.

c.

3. Select basic types of selling by placing an "X" in the appropriate blanks.

_____a. Retail

_____b. High pressure

_____c. Industrial

_____d. Wholesale

_____e. Discount

4. Select the basic buying decisions of a customer by placing an "X" in the appropriate blanks.

_____a. How much should I pay?

_____b. When should I buy?

_____c. Why should I buy?

_____d. Where should I buy?

_____e. What type, brand or style should I buy?

_____f. How much should I buy?

5. Select the basic traits of a successful salesperson by placing an "X" in the appropriate blanks.

_____a. Good looks

_____b. Enthusiasm

_____c. Poise

_____d. Nice car

_____e. Leadership

_____f. Reliability

_____g. Loyalty

_____h. Selfishness

_____i. Perseverance

_____j. Self-centered

_____k. Honesty

6. Match the five basic steps (right column) to their explanation (left column) by placing the correct number in the blank provided.

_____a. Welcoming or meeting the customer

_____b. Determining the customer's needs

_____c. Demonstrating the merchandise

_____d. Overcoming sales resistance

_____e. Closing the sales

1. Talking points
2. Demonstration
3. Approach
4. Closing
5. Related items, product benefits and substitutions

7. List eight duties of a salesperson.

   a.
   b.
   c.
   d.
   e.
   f.
   g.
   h.

8. Distinguish between the do's and don'ts of closing a sale by filling in the blanks with either "Do" or "Don't".

   a. _________ display a friendly manner at the close, even though there is disagreement between the customer and the salesman.

   b. _________ be sure to have all materials and equipment that will be needed.

   c. _________ let the customer know how much the sale means.

   d. _________ realize that begging for a sale makes the salesman and his product look bad--it also disgusts the customer.

   e. _________ be apologetic, particularly in quoting price.

   f. _________ make written or oral promises unless authorized to do so; otherwise there will be friction and expense.

   g. _________ ask the customer to "OK" or approve the order rather than sign it.

   h. _________ make a ceremony out of closing.

   i. _________ make buying as easy and painless as possible.

   j. _________ give the customer an excuse or an opportunity to back away from the purchase.

   k. _________ ever ask the customer for the buying decision in such a way that he can answer with a "Yes" or a "No" for the latter closes the door.

l. _________ try for privacy at the close.

m. _________ study each customer as a baseball pitcher studies each batter.

n. _________ make it difficult for the customer to complete his purchase quickly if he cares to do so.

9. Determine the selling features of an agriculture product.

10. Determine solutions in case studies involving working with people.

11. Complete personality rating scale.

(NOTE: If these activities have not been accomplished prior to the test, ask your instructor when they should be completed.)

SALESMANSHIP
UNIT I

ANSWERS TO TEST

1. a. 3
   b. 5
   c. 1
   d. 4
   e. 2

2. a. Approach
   b. Demonstration
   c. Close

3. a,c,d

4. a,b,c,d,e,f

5. b,c,e,f,g,i,k

6. a. 3
   b. 1
   c. 2
   d. 5
   e. 4

7. a. Prospecting
   b. Conducting sales interview
   c. Closing sale
   d. Servicing
   e. Following-up
   f. Handling complaints
   g. Administering credit program
   h. Performing other duties common to all employees

8. a. Do
   b. Do
   c. Don't
   d. Do
   e. Don't
   f. Don't
   g. Do
   h. Don't
   i. Do
   j. Don't
   k. Don't
   l. Do
   m. Do
   n. Don't

9. Evaluated to the satisfaction of the instructor.

10. Evaluated to the satisfaction of the instructor.

11. Evaluated to the satisfaction of the instructor.

DISPLAYING AND ADVERTISING
UNIT I

TERMINAL OBJECTIVES

After the completion of this unit, the student should be able to define and list objectives of advertising, list advantages of newspaper, magazines, direct mail, television, and radio, list types of sponsors and list rules for planning a display. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to :

1. Define advertising
2. List the objectives of advertising
3. Distinguish between the advantages and disadvantages of advertising
4. Describe two kinds of advertising
5. List requirements of effective advertising
6. Select from a list advantages of newspaper advertising
7. List two types of newspaper advertising
8. List three types of magazines
9. Describe advantages of direct mail
10. Discuss why television is a more important advertising media today than radio
11. Describe why radio is an important advertising media today
12. List the types of program sponsorships
13. Select from a list the desirable result of advertising
14. Define a display
15. Select from a list rules for preparing a display
16. Distinguish between window and interior displays

17. Discuss the procedures to be followed in planning and creating a display
18. Identify five common display arrangements
19. Develop a newspaper advertisement
20. Develop a display

DISPLAYING AND ADVERTISING
UNIT I

SUGGESTED ACTIVITIES

I. Instructor

1. Provide student with objective sheet
2. Provide student with information and assignment sheets
3. Discuss terminal and specific objectives
4. Discuss information and assignment sheets
5. Visit a local business and critique his display
6. Visit a local advertising firm
7. Give test

II. Student

1. Read objectives
2. Study information sheet
3. Complete assignment sheets
4. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

1. Objectives
2. Information sheet
3. Transparency master

   #1--Display Arrangements
4. Assignment sheets

   Assignment sheet #1--Write a Newspaper Advertisement
   Assignment sheet #2--Display These Products
5. Test
6. Answers to test

II. References

1. Advertising. Antrim, W.H., McGraw-Hill, OMPM, 1969.
2. Advertising and Promotion. Agricultural Education Services, Ohio State University. 1970.
3. Display and Promotion. Smith, G.R., McGraw-Hill, OMPM, 1969.

DISPLAYING AND ADVERTISING
UNIT I

INFORMATION SHEET

I. Definition of advertising--A paid announcement that informs and educates consumers so that they may choose more wisely from the variety of goods and services now on the market

II. Objectives of advertising

  A. Stimulate demand for specific products

  B. Stimulate demand for the services of specific sellers

  C. Attract attention and create interest

  D. Sell the advertised product directly

  E. Keep customers satisfied

III. Advantages and disadvantages of advertising

  A. Advantages

    1. Quickly gain attention

    2. Reaches many individuals

    3. Stimulates sales

  B. Disadvantages

    1. Non-personal in nature

    2. It cannot answer all the questions a customer may have

IV. Kinds of advertising

  A. Institutional--Attempts to convince the customer that the advertiser is a good firm

  B. Promotional

    1. Pioneer--Educates about a new product

    2. Reminder--Keeps the product in the customer's mind

    3. Notice of sale--Stresses the availability of goods

V. Requirements of effective advertising
   A. Advertise the right goods or service
   B. Advertise at the right time
   C. Advertise to the right market
   D. Advertise in the right media
   E. Use the right advertising technique

VI. Advantages of newspaper advertising
   A. Universally read
   B. Circulation is largely read
   C. Excellent medium for test sales - promotion campaigns
   D. Medium for obtaining quick sales
   E. Sales appeal may be made very timely
   F. Changed daily
   G. Long-range planning is not necessary
   H. Newspaper offices help in preparation of layout

VII. Types of newspaper advertising
   A. Display
   B. Classified

VIII. Types of magazines
   A. Consumer
   B. Class
   C. Trade, technical and professional

IX. Advantages of direct mail
   A. Directed specifically to certain groups
   B. Made personal
   C. Has no limitation on size of length
   D. Can be followed up
   E. Relatively inexpensive

X. Importance of television advertising

   A. Television has the ability to carry a message to the eye as well as the ear

   B. More than 96% of the homes have at least one television set

XI. Importance of radio advertising--Today in the U.S. almost everyone has access to a radio either in their home or their vehicle

XII. Types of program sponsorship

   A. Entertainment

   B. Educational

XIII. Desirable results of advertising

   A. Attract attention

   B. Arouse interest

   C. Create desire

   D. Induce action

XIV. Definition of display--Shows the merchandise itself, rather than giving actual information about the merchandise

XV. Rules for a display

   A. Decorate from the customer's viewpoint

   B. Maintain unity

   C. Keep merchandise and fixtures clean

XVI. Types of displays

   A. Window

      1. Closed background

      2. Semiclosed background

      3. Open background

   B. Interior

      1. Open

      2. Closed

      3. Platform

      4. Ledge and wall

      5. Architectural

XVII. Procedures for planning and creating a display

A. Develop an idea or theme

B. Select the merchandise

C. Sketch the display for each season, influences customers to buy goods

D. Implement the display

XVIII. Display arrangements (Transparency 1)

A. Mass

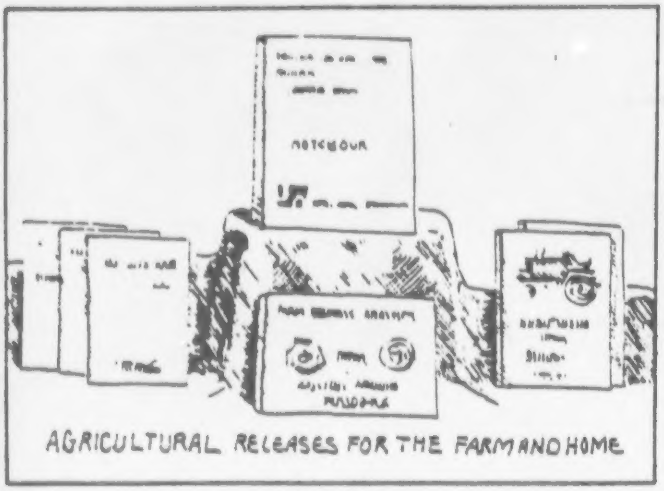
B. Unit

C. Pyramid

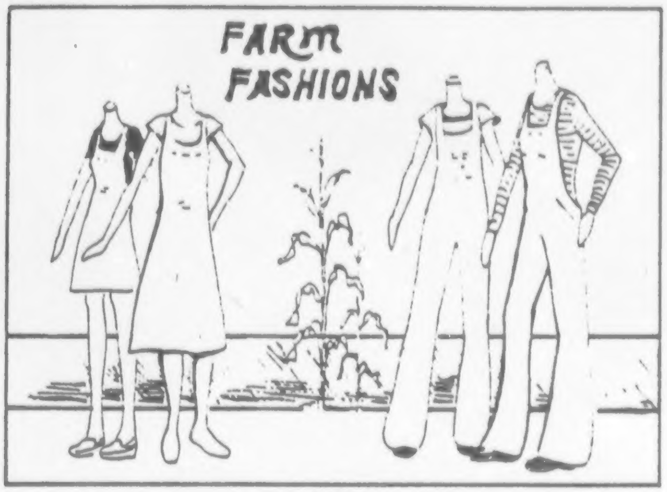
D. Step

E. Zig-zag

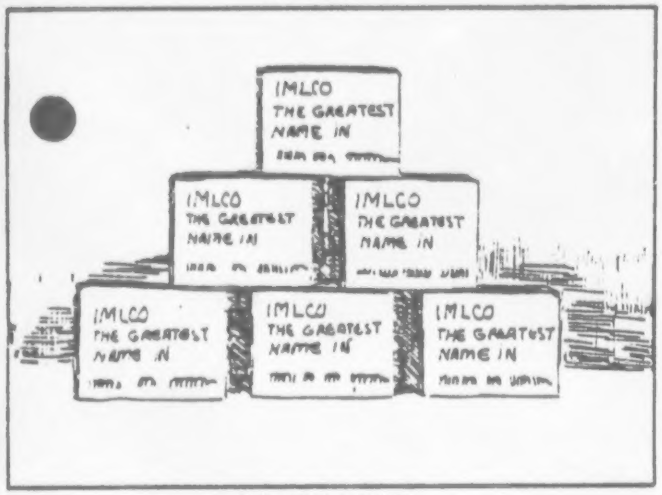
DISPLAY ARRANGEMENTS


NOTEBOOK
AGRICULTURAL RELEASES FOR THE FARM AND HOME

MASS


FARM
FASHIONS

UNIT


IMLCO
THE GREATEST
NAME IN
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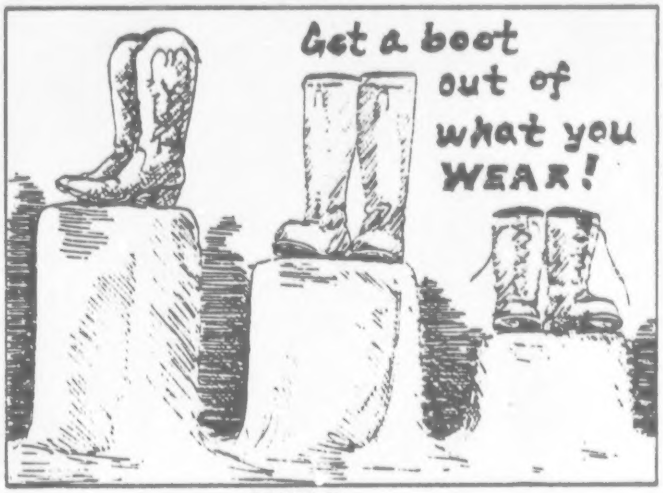
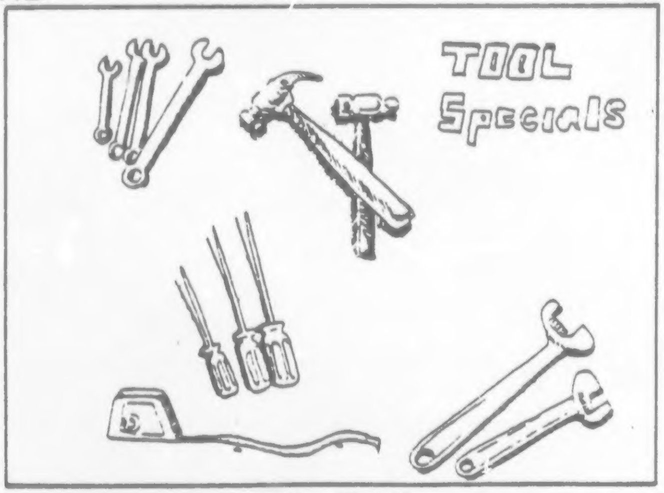
NAME IN

PYRAMID


Get a boot
out of
what you
WEAR!

STEP


TOOL
Specials

ZIG-ZAG

DISPLAYING AND ADVERTISING
UNIT I

ASSIGNMENT SHEET #1--WRITE A NEWSPAPER ADVERTISEMENT

Directions: Write a newspaper advertisement about your favorite brand of herbicide.

DISPLAYING AND ADVERTISING
UNIT I

ASSIGNMENT SHEET #2--DEVELOP A DISPLAY

Directions: Using the rules and types of display and the procedures for planning and creating a display, show how you would display the following: a saddle, a bridle, a saddle blanket and a gun.

DISPLAYING AND ADVERTISING
UNIT I

TEST

1. Define advertising.

2. List the objectives of advertising.

   a.

   b.

   c.

   d.

   e.

3. Distinguish between the advantages and disadvantages of advertising by placing an "A" for advantages and a "D" for disadvantages in the appropriate blanks.

   _____a. Non-personal in nature

   _____b. Quickly gain attention

   _____c. Stimulates sales

   _____d. Cannot answer all questions a customer may have

   _____e. Reaches individuals at a lower cost

4. Describe two kinds of advertising.

   a.

   b.

5. List requirements of effective advertising.

   a.

   b.

   c.

   d.

   e.

6. Select from a list advantages of newspaper advertising by placing an "X" in the appropriate blanks.

   _____a. Universally read

   _____b. Circulation is largely read

   _____c. Excellent medium for test sales

   _____d. Medium for obtaining quick sales

   _____e. Timely

   _____f. Changed daily

   _____g. Planning is not necessary

   _____h. Editor will always write up your advertisement for you

7. List two types of newspaper advertising.

   a.

   b.

8. List three types of magazines

   a.

   b.

   c.

9. Describe advantages of direct mail.

10. Discuss why television is a more important advertising medium today than radio.

11. Describe why radio is an important advertising media today.

12. List types of sponsorships.

a.

b.

13. Select the desirable results of advertising on television and radio by placing and "X" in the appropriate blanks.

_____a. Create desire

_____b. Induce action

_____c. Attract attention

_____d. Induce sentimental reaction

_____e. Arouse interest

14. Define display.

15. Select from a list rules in preparing a display by placing an "X" in the appropriate blanks.

_____a. Decorate from the customer's viewpoint

_____b. Maintain unity

_____c. Keep merchandise and fixtures clean

_____d. Use background and lights for effect

_____e. Keep lines and design simple

_____f. Coordinate color and harmony

_____g. Show merchandise as it would be used if possible

_____h. Make display reflect store's character

_____i. Change display often

16. Distinguish between window and interior displays by placing a "W" for windows and an "I" for interior in the appropriate blanks.

_____a. Closed background

_____b. Open

_____c. Closed

_____d. Semiclosed

_____e. Architectural

_____f. Ledge and wall

_____g. Open background

_____h. Platform

17. Discuss the procedure to be followed in planning and creating a display.

18. Identify five common display arrangements.

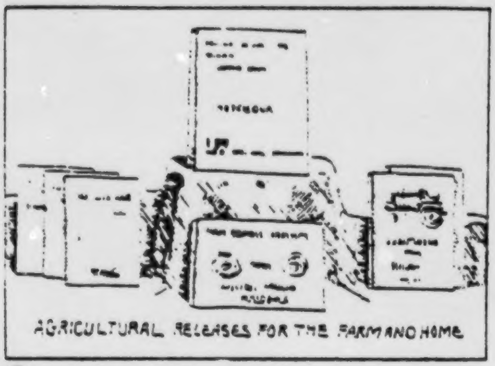
a.

b.

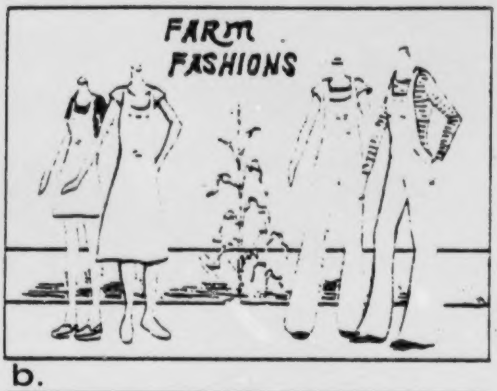
c.

d.

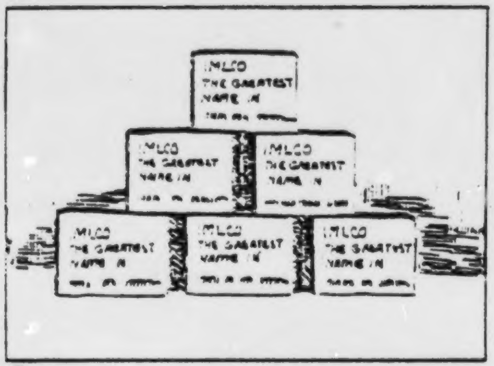
e.


AGRICULTURAL RELEASES FOR THE FARM AND HOME

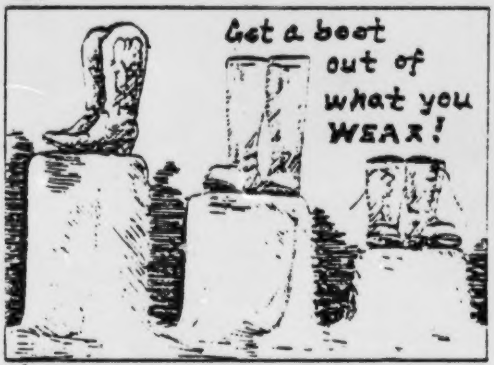
a.


FARM
FASHIONS

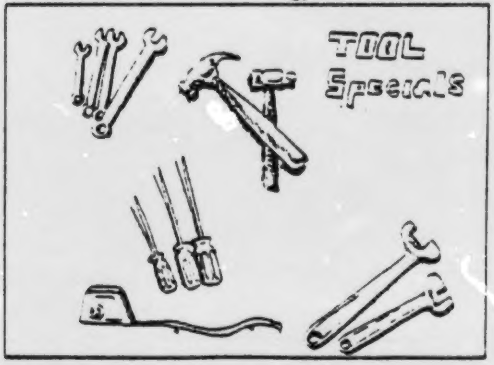
b.


IMLCO
THE GREATEST
NAME IN

c.


Get a boot
out of
what you
WEAR!

d.


TOOL
Specials

e.

19. Develop a newspaper advertisement

20. Develop a display.

(NOTE: If these activities have not been accomplished prior to the test, ask your instructor when they should be completed.)

DISPLAYING AND ADVERTISING
UNIT I

ANSWERS TO TEST

1. A paid announcement that informs and educates consumers so that they may choose more wisely from the unprecedented variety fo goods and services now on the market
2. a. Stimulate demand for specific products of specific sellers
   b. Stimulate demand for the services of specific sellers
   c. Attract attention and create interest
   d. Sell the advertised product directly
   e. Keep customers satisfied
3. a. d
   b. a
   c. a
   d. d
   e. a
4. a. Institutional--Attempts to convince the customer that the advertiser is a good firm
   b. Promotional
      1. Pioneer--Educates about a new product
      2. Reminder--Keeps the product in the customer's mind
      3. Notice of sale--Stresses the availability of goods
5. a. Advertise the right goods of service
   b. Advertise at the right time
   c. Advertise to the right market
   d. Advertise in the right media
   e. Use the right technique
6. a, b, c, d, e, f,
7. a. Display
   b. Classified

8. a. Consumer
    b. Class
9. c. Trade, technical and professional
9. a. Directed spefically to certain group
    b. Make personal
    c. Had no limitation on size or length
    d. Can be followed up
    e. Relatively inexpensive
10. a. Television has the ability to carry a message to the eye as well as the ear
    b. More than 96% of the homes have at least one television set
11. Almost everyone in the U.S. today has access to a radio either in their home or vehicle
12. a. Entertainment
    b. Educational
13. a, b, c, e
14. Shows the merchandise itself, rather than giving actual information about it
15. a, b, c, d, e, f, g, h, i
16. a. W
    b. I
    c. I
    d. W
    e. I
    f. I
    g. W
    h. I
17. Discussion should include:
    a. Develop an idea or theme
    b. Select the merchandise
    c. Sketch the display for each season, influence customer to buy
    d. Implement the display

18. a. Mass
    b. Unit
    c. Pyramid
    d. Step
    e. Zig-zag
19. Evaluated to the satisfaction of the instructor.
20. Evaluated to the satisfaction of the instructor.

CAREERS IN AGRICULTURE
UNIT II

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to identify items to be considered when selecting a career and describe the process by which a person chooses an occupation. He should be able to discuss opportunities in the different areas of agriculture. This knowledge will be evidenced by scoring eighty-five percent on a unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Match terms associated with careers with their correct definition.
2. Select from a list the items to be considered in choosing a career.
3. List three points to consider when selecting any given occupation.
4. Match the occupations in agriculture with its occupational area.
5. Rank in order the income of agricultural enterprises in the United States.
6. Discuss in a short paragraph the economic statistics of the farm industry.
7. Complete the social security application form and secure a social security number.

CAREERS IN AGRICULTURE
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:

   A. Provide students with objective sheet.
   B. Provide students with information and assignment sheets.
   C. Make transparencies.
   D. Discuss terminal and specific objectives.
   E. Discuss information and assignment sheets.
   F. Secure social security application forms for each student.
   G. Give test.

   (NOTE: The teacher may wish to take the class and visit various businesses in the community to assist in teaching agricultural occupations. As a basis for providing information useful in guidance, the teacher may also wish to administer the Vocational Agriculture Interest Examination, available from Interstate Printers, and/or have each student write an autobiography of himself and his interest to be placed on file.)

II. Student:

   A. Read objectives.
   B. Study information sheet and take notes.
   C. Complete assignment sheet. (Apply for social security number)
   D. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives
   B. Information sheet
   C. Transparency masters
      1. TM 1 - Production-Distribution Cycle and Number Employed
      2. TM 2 - Sample Social Security Card
   D. Assignment sheet
      1. Assignment Sheet #1 - Complete Social Security Application Form
   E. Test
   F. Answers to test

II. References:

A. Agriculture is More Than Farming, prepared by the American Association of Teacher Educators in Agriculture, The National Association of Agricultural Education Supervisors, and The National Vocational Agricultural Teacher's Association, Inc., The Future Farmers Supply Service, Alexandria, Virginia.

B. Stone, Archie A. Agribusiness and Industry. Danville, Illinois: Interstate Printers and Publishers, 1965.

C. Hoover, Norman K. Handbook of Agricultural Occupations. Danville, Illinois: Interstate Printers and Publishers, 1963.

D. Byrum, Harold M. Guidance in Agricultural Education. Danville, Illinois: Interstate Printers and Publishers, 1966.

E. Official Classification of Agricultural Occupations. Washington, D.C.: U.S. Office of Education, 1966-67.

F. "Attachment #2 VE6000 Report," Occupational Objective for Vocational Agriculture.

G. Statistical Abstract of the United States 1973, prepared under the supervision of William Lerner, Washington, D.C.: U.S. Department of Commerce.

H. County Business Patterns 1976. Washington, D.C.: U.S. Department of Commerce.

I. Golendack, Dan. Information Please Almanac Atlas and Yearbook. New York: Associates, 1973.

J. Agricultural Statistics 1975, U.S. Government Printing Office, Washington, D.C.: U.S. Department of Agriculture

K. Agricultural Outlook, U.S. Department of Agriculture Economics, Statistics, and Cooperative Service, Washington, D.C. 20250.

CAREERS IN AGRICULTURE
UNIT II

INFORMATION SHEET

I. Terms and definitions

   A. Agricultural industry (Agindustry) - Refers collectively to: (1) the industries producing agricultural commodities, (2) the industries and businesses supplying and servicing those engaged in agricultural commodity production, and (3) the industries and businesses performing all the necessary functions in making agricultural commodities available to the consumer

   B. Agribusiness - Refers to the business of producing, processing, and marketing feed and food with the aid that modern science, engineering, industry, finance, and trade can provide

   C. Career - The total pattern of jobs or activities performed during a person's lifetime

   D. Occupation - A person's regular work, business, or means of earning a living

   E. Job - The specific work a person performs

II. Items to consider in choosing a career

   A. Likes, dislikes, and abilities

   B. Interests and abilities

   C. Various occupations in agriculture

   D. Occupational possibilities in the different areas of agriculture

   E. Education and experience requirements for entry into the occupation

   F. Responsibility demands for various careers

III. Points to consider in selecting any given occupation

   A. Type of work

      1. Inside or outside

      2. Degree of responsibility

   B. Working conditions

      1. Hazards or surroundings

      2. Child Labor Laws

- C. Training requirements
- D. Possible salaries
- E. Opportunities for advancement

IV. Occupational opportunities in agriculture (Transparency 1)

- A. Agriculture production
    - 1. Farm or ranch owner/operator
    - 2. Farm manager
    - 3. Hatchery operator
- B. Agricultural supplies
    - 1. Grain elevator manager/employee
    - 2. Salesman
    - 3. Product development engineer or scientist
    - 4. Custom operator
- C. Agricultural Products
    - 1. Quality control supervisor
    - 2. Warehouse or shipping manager
    - 3. Processed food salesman
    - 4. DHIA tester
    - 5. Livestock buyer
    - 6. Food inspector
- D. Ornamental horticulture
    - 1. Nurseryman
    - 2. Florist
    - 3. Landscape aide
    - 4. Golf course employee
    - 5. Greenhouse operator
- E. Agricultural resources
    - 1. Soil conservationist
    - 2. Wildlife conservationist
    - 3. Fish hatcheryman
    - 4. Recreation farm manager
- F. Agricultural education
    - 1. High school teacher
    - 2. College teacher

    3. Area extension director
    4. Farm loan officer
    5. Farm insurance adjustor
- G. Agricultural mechanics
    1. Welder
    2. Agricultural machinery mechanic/employee
    3. Farm equipment operator
    4. Agricultural representative for electrical company or co-op
- H. Forestry
    1. Forester
    2. Saw mill operator
    3. Christmas tree grower

V. Income of agricultural enterprises in United States

(1978) Enterprise	Income (millions of $)
A. Meat animals	36,695
B. Feed Crops	11,386
C. Oil bearing crops	11,843
D. Dairy products	12,701
E. Food grains	5,833
F. Poultry and eggs	8,008
G. Vegetables and melons	6,154
H. Fruits and nuts	5,406
I. Cotton and cottonseed	3,706
J. Tobacco	2,549
Total farm income 1978	
Crops	52,180
Livestock and livestock products	58,041
Government payments	3,000
Total	94,051

VI. Economic status of farm industry in United States (1977)

A. Farm population	7,806,000
B. Number of farms	2,706,000
C. All land in farms (acres)	1,081,000
D. Average acreage/farm	383

E.	Value of farm property (land buildings)	708.3 billion
F.	Net income per farm	7,592
G.	Farmers average share of retail cost approximately: 40% (farm value ÷ retail cost)	

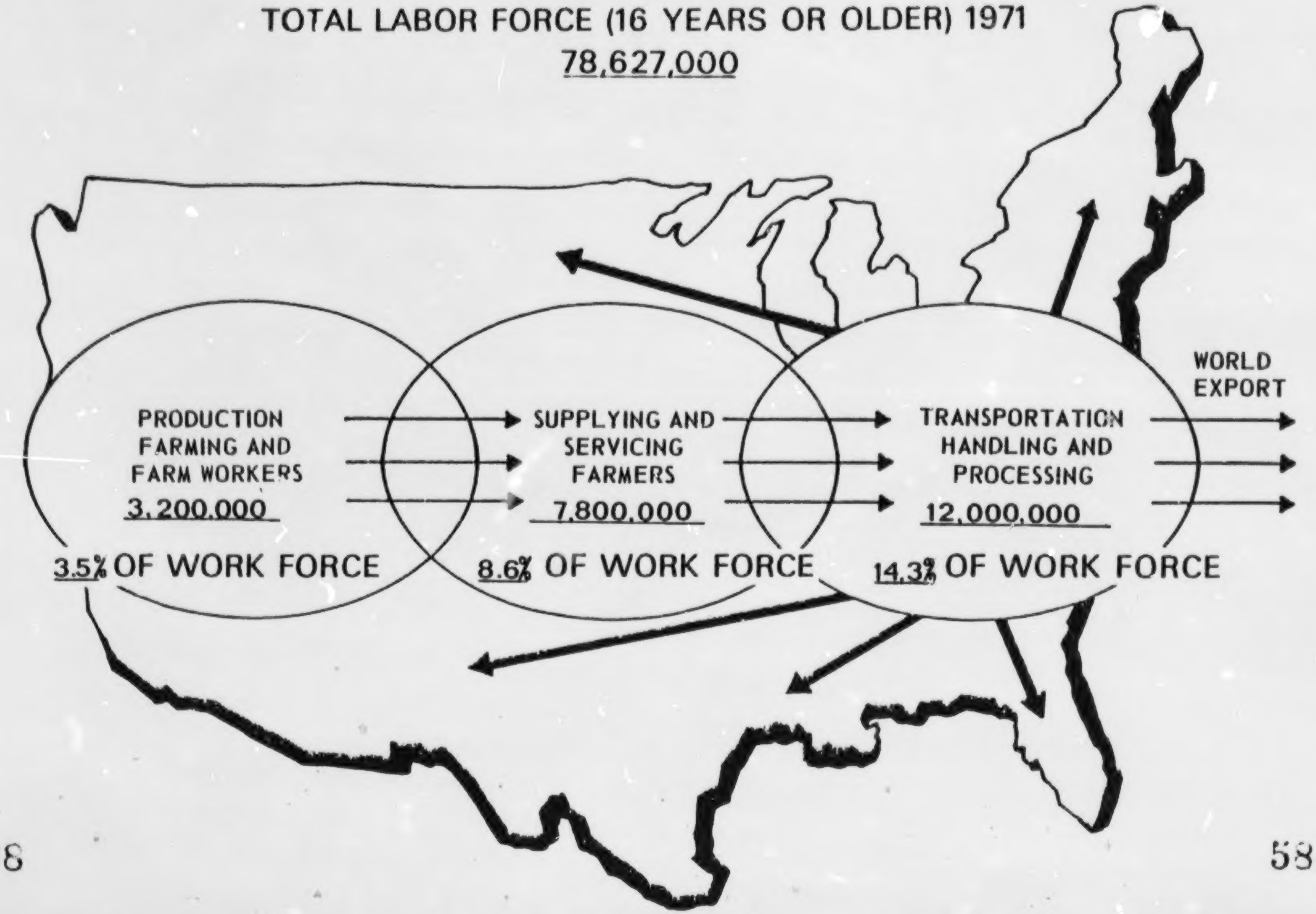
VII. Social security form (Transparency 2)

(NOTE: Teacher should provide actual S.S. application forms for all who do not have a S.S. number.)

Production-Distribution Cycle and Number Employed

TOTAL LABOR FORCE (16 YEARS OR OLDER) 1971

78,627,000



PRODUCTION
FARMING AND
FARM WORKERS
3,200,000

3.5% OF WORK FORCE

SUPPLYING AND
SERVICING
FARMERS
7,800,000

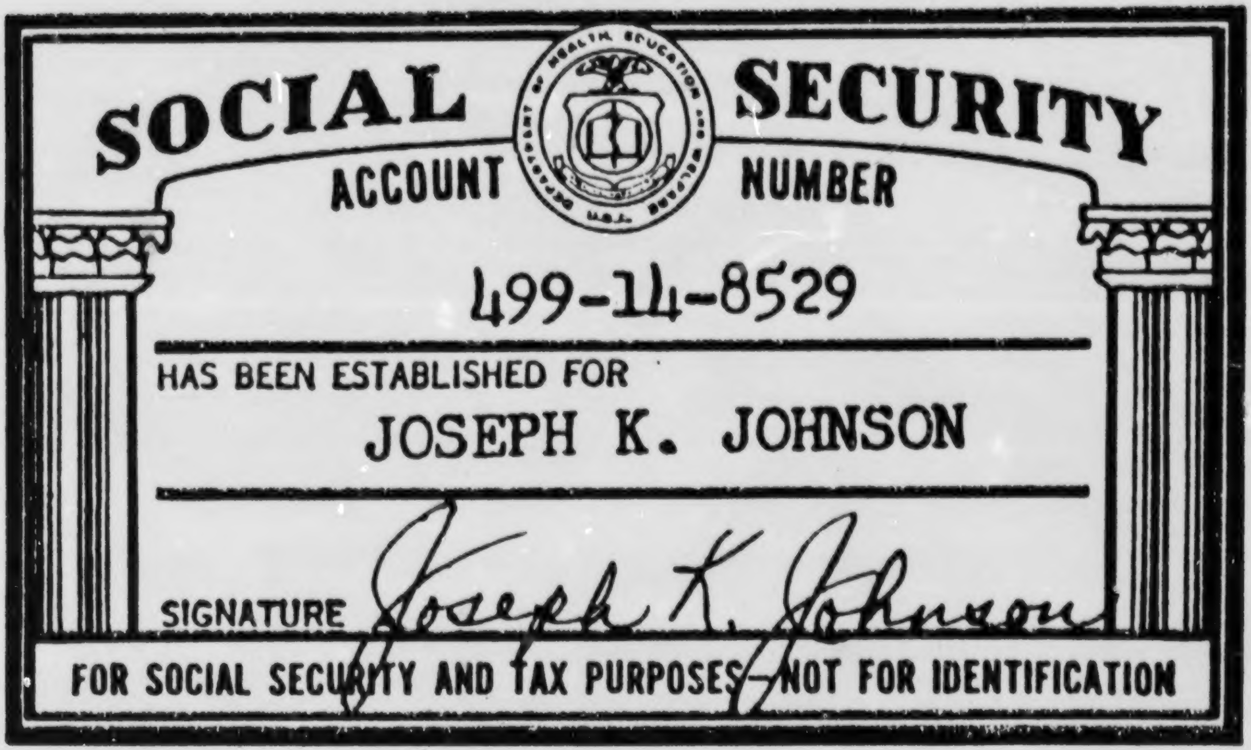
8.6% OF WORK FORCE

TRANSPORTATION
HANDLING AND
PROCESSING
12,000,000

14.3% OF WORK FORCE

WORLD
EXPORT

Sample Social Security Card



SOCIAL SECURITY

DEPARTMENT OF HEALTH EDUCATION AND WELFARE U.S.A.

ACCOUNT NUMBER

499-14-8529

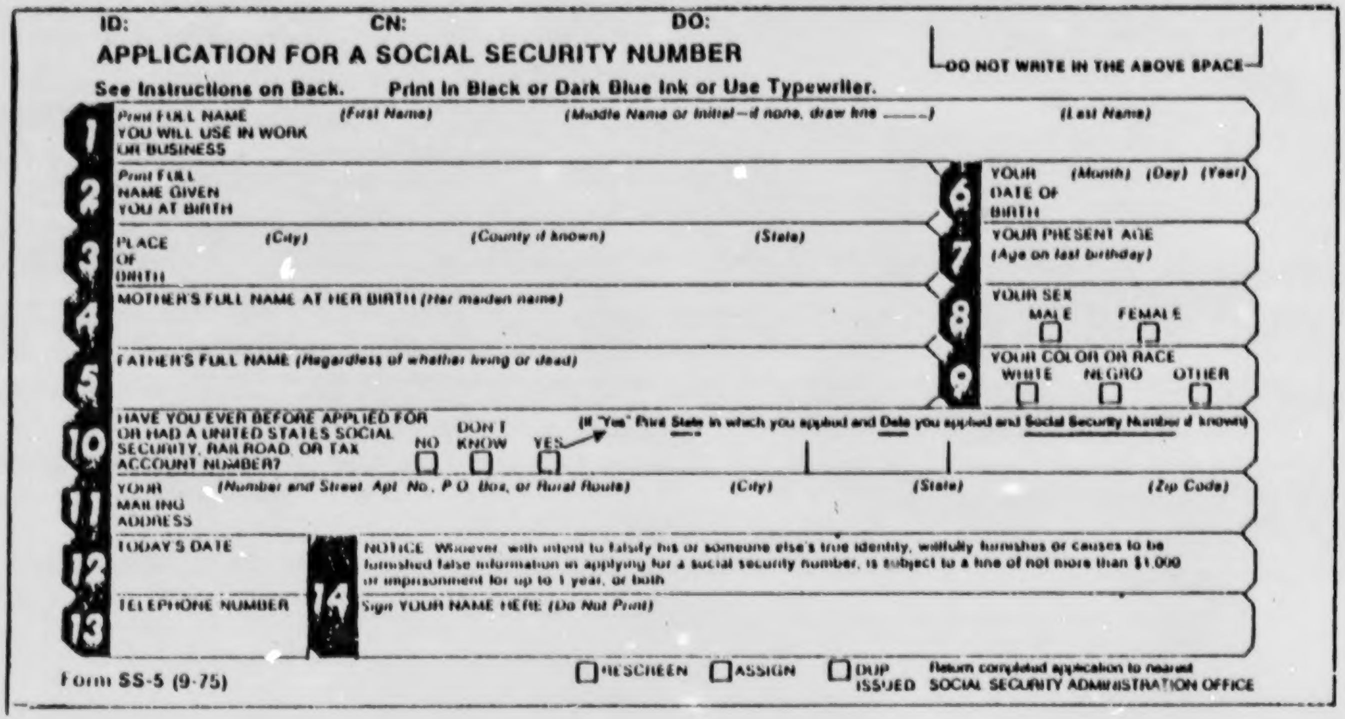
HAS BEEN ESTABLISHED FOR

JOSEPH K. JOHNSON

SIGNATURE Joseph K. Johnson

FOR SOCIAL SECURITY AND TAX PURPOSES—NOT FOR IDENTIFICATION

ASSIGNMENT SHEET #1 - COMPLETE SOCIAL SECURITY APPLICATION FORM



ID: CN: DO:

APPLICATION FOR A SOCIAL SECURITY NUMBER

DO NOT WRITE IN THE ABOVE SPACE

See Instructions on Back. Print in Black or Dark Blue Ink or Use Typewriter.

1 Print FULL NAME YOU WILL USE IN WORK OR BUSINESS (First Name) (Middle Name or Initial—if none, draw line ——) (Last Name)

2 Print FULL NAME GIVEN YOU AT BIRTH

3 PLACE OF BIRTH (City) (County if known) (State)

4 MOTHER'S FULL NAME AT HER BIRTH (Her maiden name)

5 FATHER'S FULL NAME (Regardless of whether living or dead)

6 YOUR DATE OF BIRTH (Month) (Day) (Year)

7 YOUR PRESENT AGE (Age on last birthday)

8 YOUR SEX MALE ☐ FEMALE ☐

9 YOUR COLOR OR RACE WHITE ☐ NEGRO ☐ OTHER ☐

10 HAVE YOU EVER BEFORE APPLIED FOR OR HAD A UNITED STATES SOCIAL SECURITY, RAILROAD, OR TAX ACCOUNT NUMBER? NO ☐ DON'T KNOW ☐ YES ☐ (If "Yes" Print State in which you applied and Date you applied and Social Security Number if known)

11 YOUR MAILING ADDRESS (Number and Street, Apt. No., P.O. Box, or Rural Route) (City) (State) (Zip Code)

12 TODAY'S DATE

13 TELEPHONE NUMBER

14 NOTICE: Whoever, with intent to falsify his or someone else's true identity, willfully furnishes or causes to be furnished false information in applying for a social security number, is subject to a fine of not more than $1,000 or imprisonment for up to 1 year, or both

Sign YOUR NAME HERE (Do Not Print)

Form SS-5 (9-75) ☐ RESCREEN ☐ ASSIGN ☐ DUP ISSUED Return completed application to nearest SOCIAL SECURITY ADMINISTRATION OFFICE

CAREERS IN AGRICULTURE
UNIT II

TEST

1. Match the term on the right with its correct definition.

_____a. The total pattern of jobs or activities performed during a person's lifetime

_____b. A person's regular work, business, or means of earning a living

_____c. The specific work a person performs

_____d. Refers collectively to (1) the industries producing agricultural commodities, (2) the industries and businesses supplying and servicing those engaged in agricultural commodity production, and (3) the industries and businesses performing all the necessary functions in making agricultural commodities available to the consumer

_____e. Refers to the business of producing, processing, and marketing feed and food with the aid that modern science, engineering, industry, finance, and trade can provide

1. Agricultural Industry
2. Agribusiness
3. Career
4. Occupation
5. Job

2. Place an "X" in front of items that should be considered in choosing a career.

_____a. Likes and dislikes, and abilities

_____b. Interests and abilities

_____c. Retirement

_____d. Fringe benefits

_____e. Various occupations in agriculture

_____f. Education and experience requirements for entry into the occupation

3. List three points to consider when selecting any given occupation.

a.

b.

c.

4. Match the areas of agriculture on the right with the occupations listed on the left. Areas may be used more than once.

_____a. Quality control supervisor

_____b. Farm operator

_____c. Area extension director

_____d. Farm equipment operator

_____e. Soil conservationist

_____f. Processed food salesman

_____g. Custom operator

_____h. Welder

_____i. High school teacher

_____j. Warehouse manager

_____k. Saw mill operator

_____l. Agricultural machinery dealer

_____m. Food inspector

_____n. Grain elevator employee

_____o. Florist

1. Agricultural production
2. Agricultural supplies
3. Agricultural mechanics
4. Agricultural products
5. Ornamental Horticulture
6. Agricultural resources
7. Forestry
8. Agricultural education

5. Number in order the agricultural enterprises by income by placing a "1" in front of the enterprise with the most income, "2" for the next highest income, etc.

_____a. Fruit and nuts

_____b. Vegetables

_____c. Cotton and cottonseed

_____d. Tobacco

_____e. Meat animals

_____f. Poultry and eggs

_____g. Dairy products

_____h. Feed grains and hay

_____i. Oil bearing crops

_____j. Food grains

6. Discuss in a short paragraph the economic statistics of the farm industry in the United States.

7. Complete the social security application form and secure a social security number.

CAREERS IN AGRICULTURE
UNIT II

ANSWERS TO TEST

1. a. 3
   b. 4
   c. 5
   d. 1
   e. 2

2. a,b,e,f

3. Any three of the following:
   a. Type of work
   b. Working conditions
   c. Training requirements
   d. Possible salaries
   e. Opportunities for advancement

4. a. 4
   b. 1
   c. 8
   d. 3
   e. 6
   f. 4
   g. 2
   h. 3
   i. 8
   j. 4
   k. 7
   l. 3
   m. 4
   n. 2
   o. 5

5. a. 8
   b. 7
   c. 9
   d. 10
   e. 1
   f. 6
   g. 4
   h. 2
   i. 3
   j. 5

6. Discussion should include:

a.	Farm population	7,806,000
b.	Number of farms	2,706,000
c.	All farm land (acres)	1,081,000
d.	Average acre/farm	383
e.	Value of farm property	708.3 billion
f.	Net income per farm	7,592
g.	Farmers average share of retail cost is approximately 40%	

HUMAN RELATIONS
UNIT II

TERMINAL OBJECTIVE

After completion of Unit II, the student should be able to distinguish between good and poor forms of behavior. He should be able to classify traits that make one either delightful or irritating to work with. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of instruction, the student should be able to:

1. Match terms associated with human relations to the correct definition.
2. Name three rules to follow in becoming acquainted and accepted by a group.
3. Name three rules to follow when introducing others.
4. Select from a list of alternatives why most individuals are fired from their jobs.
5. Distinguish between good and poor forms of behavior.
6. Name two problems that may be created by the worker who is "just putting in his time."
7. Classify traits as either delightful or irritating.
8. Demonstrate the ability to interview and gather information.
9. Select the desirable personality traits as determined by the instructors.

HUMAN RELATIONS
UNIT II

SUGGESTED ACTIVITIES

I. Instructor:
   A. Provide students with objective sheet.
   B. Provide students with information sheets.
   C. Discuss terminal and specific objectives.
   D. Discuss information sheets.
   E. Give test.

II. Students:
   A. Read objectives.
   B. Study information sheets.
   C. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:
   A. Objectives
   B. Information sheets
   C. Assignment Sheet #1 - Interview an Individual
   D. Test
   E. Answers to test

II. References:
   A. Wood-McKenna. The Receptionist. Dallas Texas: Gregg Division, McGraw-Hill Book Company.
   B. Archer-Brecher-Frakes-Stewart. General Office Practice. Dallas, Texas: Gregg Division, McGraw-Hill Book Company.
   C. Human Relations in Agricultural Business, Vocational Agriculture Service, College of Agriculture, University of Illinois, Urbana, Illinois.
   D. Public Relations. Cooperative Extension Service, Kansas State University, Manhattan, Kansas XL-409

HUMAN RELATIONS
UNIT II

INFORMATION SHEET

I. Terms and definitions

- A. Human relations - The act of getting along with people
- B. Self-discipline - The ability to control one's self at all times
- C. Tact - The ability to express ideas and opinions so they do not insult others
- D. Courtesy - The well-mannered conduct toward others; treating others as you would like to be treated
- E. Respect - The regard for the other person, his property, and his opinions
- F. Honesty - One's truthfulness in all words and deeds
- G. Loyalty - The support for a cause
- H. Morale - A state of mind which reflects an individual's attitudes toward his job, fellow workers, and employers
- I. Compromise - A mutual agreement made by concession on both sides

II. Rules for becoming acquainted and accepted

- A. Be pleasant, cheerful, and friendly to everyone
- B. Proper appearance
- C. Take time to know the individuals before joining cliques
- D. Don't force yourself on others
- E. If invited, try company sponsored social groups and/or teams

III. Rules for introducing others

- A. Introduce man to woman
- B. Younger to older
- C. Prominent to less prominent

(NOTE: Use a pleasant form of greeting and repeat the person's name. Example: Say, "How do you do, Mr. Jones," and smile.)

IV. The reason ninety percent of the people are fired from their jobs - Inability to get along with others

V. Forms of behavior
    A. Good
        1. Accuracy
        2. Reliability
        3. Honesty
        4. Initiative
        5. Dependability
    B. Poor
        1. Disloyalty
        2. Inconsideration
        3. Excessive tardiness
        4. Carelessness
        5. Poor attitude

VI. Problems that may be created by the worker who is "just putting in his time"
    A. Low morale among other workers
    B. Costly to company

VII. Traits that are either delightful or irritating
    A. Delightful
        1. Sense of humor
        2. Tolerance
        3. Energy
        4. Enthusiasm
        5. Self-confidence
        6. Consideration for others
        7. Doing more than your share
    B. Irritating
        1. Hums or whistles incessantly
        2. Gossips
        3. Chews gum or smokes thoughtlessly
        4. Interrupts frequently
        5. Uses foul language
        6. Criticizes or belittles others
        7. Says unkind things

HUMAN RELATIONS
UNIT II

ASSIGNMENT SHEET #1 - INTERVIEW AN INDIVIDUAL

Select someone in our community to interview concerning their thoughts on the following items:

1. Who is the individual?______________________________
2. Number of years in present community?_____________________________
3. Member of civic organizations? _____________________________
4. If you are an employer how many workers do you employ a year? (to include part-time workers)______________________
5. Define the following as your ideals for employing an individual as to:
   a. Reliability
   b. Dependability
   c. Honesty
   d. Initiative
   e. Moral Character
   f. Ability to work with others.

HUMAN RELATIONS
UNIT II

TEST

1. Match the terms on the right to the correct definition.

______a. A mutual agreement made by concession on both sides

______b. The act of getting along with people

______c. A state of mind which reflects an individual's attitudes toward his job, fellow workers, and employers

______d. The ability to control one's self at all times

______e. The support for a cause

______f. The ability to express ideas and opinions so they do not insult others

______g. One's truthfulness in all words and deeds

______h. The well-mannered conduct toward others; treating others as you would like to be treated

______i. The regard for the other person, his property, and his opinions

1. Respect
2. Honesty
3. Loyalty
4. Morale
5. Compromise
6. Human relations
7. Self-discipline
8. Tact
9. Courtesy

2. Name three rules to follow in becoming acquainted and accepted by a group.

a.

b.

c.

3. Name three rules to follow when introducing others.

a.

b.

c.

4. Select by placing an "X" in the blank which represents why most individuals lose their jobs.

   _____a. Not trained for the particular job.

   _____b. Inability to get along with others.

   _____c. Not interested in the work.

   _____d. Late for work

5. Which of the following terms and statements indicate forms of good behavior? Place an "X" in the blank if the term is an indication of good behavior.

   _____a. Poor attitude

   _____b. Honesty

   _____c. Carelessness

   _____d. Initiative

   _____e. Accuracy

   _____f. Disloyalty

6. Name two problems that may be created by the worker who is "just putting in his time."

   a.

   b.

7. Classify the following traits as either delightful or irritating. Place a "D" in the blank if the trait or an "I" in the blank if it represents an irritating trait.

   _____a. Gossips

   _____b. Energy

   _____c. Sense of humor

   _____d. Uses foul language

   _____e. Self-confidence

   _____f. Criticizes or belittles others

   _____g. Doing more than your share

   _____h. Consideration for others

HUMAN RELATIONS
UNIT II

ANSWERS TO TEST

1. __5__ a.

   __6__ b.

   __4__ c.

   __7__ d.

   __3__ e.

   __8__ f.

   __2__ g.

   __9__ h.

   __1__ i.

2. Any three of the following:

   a. Be pleasant, cheerful, and friendly to everyone

   b. Take time to know the individuals before joining cliques

   c. Don't force yourself on others

   d. If invited, try company sponsored social groups and/or teams

3. a. Introduce man to woman

   b. Younger to older

   c. Prominent to less prominent

4. b

5. b, d, e

6. a. Low morale among other workers
   b. Costly to company

7. I a.
   D b.
   D c.
   I d.
   D e.
   I f.
   D g.
   D h.

CAREER SELECTION
UNIT I

TERMINAL OBJECTIVE

After completion of Unit I, the student should be able to identify the different career opportunities that are available in the field of agriculture. He should be able to select a career to pursue upon completion of the high school program and secure as much information as possible related to the selection. This knowledge will be evidenced through demonstration and by scoring eighty-five percent on the post test.

SPECIFIC OBJECTIVES

After completion of instruction, the student should be able to:

1. Match terms associated with career selection to the correct definition.
2. Name three main areas of vocational agriculture training as they relate to career selection.
3. Name three reasons for choosing a career.
4. Name four ways in which the agriculture program in which he is now enrolled will help in preparing for an occupation later in life.
5. Discuss in a short paragraph the benefits of selecting a career involved in agriculture.
6. Name the eight occupational areas that are available in the field of agriculture.
7. Name the eight levels of employment within the occupational areas.
8. Name three sources of informaiton on agricultural careers.
9. Name four important factors to consider when selecting a career.
10. Select the top four occupations based on number of employees needed related to agri-business.
11. Select a career and collect as much information as possible concerning qualifications, expected advancement, salary, and the future outlook.
12. Visit a college program that is close to his school community and identify the opportunities that are being offered related to a career selection in agriculture.

CAREER SELECTION
UNIT I

SUGGESTED ACTIVITIES

I. Instructor:

  A. Provide students with objective sheet.

  B. Provide students with information and assignment sheets.

  C. Make transparencies.

  D. Discuss terminal and specific objectives.

  E. Discuss information and assignment sheets.

  F. Discuss with students the importance of selecting a career.

  G. Take field trip to allow students an opportunity to see the areas of agriculture as they relate to agri-business.

  H. Give test.

II. Students:

  A. Read objectives.

  B. Study information sheets.

  C. Complete assignment sheets.

  D. Participate in field trip.

  E. Take test.

INSTRUCTIONAL MATERIALS

I. Included in this unit:

  A. Objectives

  B. Informaiton sheets

  C. Transparency masters

    1. TM 1 - Part of a Complete Program
    2. TM 2 - Agriculture is More Than Farming
    3. TM 3 - Three-Way Instruction
    4. TM 4 - A Path to a Choice
    5. TM 5 - A Large Segment in the World of Work

  D. Assignment sheets

    1. Assignment Sheet #1 - Select and Collect Information on Careers

2. Assignment Sheet #2 - Visit a College Program and Identify Opportunities Offered Related to Agri-Business

E. Test

F. Answers to test

II. References:

A. Hoover, Norman K. Handbook of Agricultural Occupations. Danville, Illinois: The Interstate Printers and Publishers, Inc.

B. Mitchell, Jesse B. Off-Farm Agri-Business Occupations in Oklahoma. A research study conducted by the Division of Research, Planning, and Evaluation, State Department of Vocational and Technical Education, Stillwater, Oklahoma.

C. 1974, Handbook for Vocational and Technical Education Planners Cycle III: January, 1974.

CAREER SELECTION
UNIT I

INFORMATION SHEET

I. Terms and definitions

A. Agricutural industry - The industry covering broad areas of agriculture from production, through applying a servicing, business, finance, and all the necessary functions of making agricultural commodities available to the consumer.

B. Agri-business - A term referring to the inputs of producing food and fiber, including processing and marketing of food and fiber.

C. Cooperative - A work-study program of vocational education for persons who through a cooperative arrangement between the educational agency and employers receive instruction, including academic courses and related vocational instruction.

D. Career - A course of continued progress in the life work of a person or progress through life in a series of related occupations or activities.

E. Career pattern - The sequence of occupations in the life of an individual that makes up a career.

F. Occupation - A group of related jobs in an area of work which constitutes the work a person does regularly to make a living.

G. Occupational choice - A process one goes through eliminating some occupatio and retaining others until an occupation has been chosen.

H. Job - A piece of work which is rather specific and definite in nature.

II. Areas of vocational agriculture training (Transparencies 1, 2, and 3)

A. Seven national vocational agriculture areas of study (TM 2)

B. Kansas areas for approved vocational agriculture programs

1. Production Agriculture
2. Agricultural Supplies/Services
3. Agricultural Mechanics
4. Horticulture
5. Renewable Natural Resources

III. Benefits of choosing a career

A. Happiness and satisfaction

B. Opportunities for promotion and advancement

C. Financial and fringe benefits

- D. Selection of people to work with

IV. Benefits of Vo-Ag program in career selection
- A. Aids student in becoming established in agriculture
- B. Co-op experience program prepares for agricultural occupations
- C. Production and improvement projects aid in occupational choice
- D. School farm aids in occupational choice
- E. Farm management helps with occupational choice
- F. FFA activities teach many important aspects of occupational training

V. Agriculture as a career (Transparencies 4 and 5)
- A. Agriculture is more than farming
  1. 1/4 of the U.S. labor force is connected with agricultural industry
  2. 4.2 million people work on farms
  3. 21 million employed in related fields
  4. Over 500 different job titles exist
  5. 15,000 agricultural college graduates needed each year
  6. 3,000 average new jobs needed in Kansas in 1978-1985
  7. Three out of every ten jobs in private employment are directly related to agriculture
- B. Agriculture is a way of life

VI. Occupational areas
- A. Agri-business
- B. Communications
- C. Education
- D. Industry
- E. Research
- F. Conservation
- G. Services
- H. Farming-ranching
- I. Horticulture

VII. Level of employment
- A. Professional
- B. Technical
- C. Managerial

- D. Supervisory
- E. Sales
- F. Office
- G. Skilled
- H. Semi-skilled
- I. Unskilled

VIII. Agricultural career information sources

- A. Vocational agriculture instructor
- B. Guidance counselor
- C. Agricultural industries
- D. U.S.D.A. offices
- E. Junior colleges
- F. Area Vocational-technical schools
- G. Kansas State University

IX. Factors to consider when selecting careers

- A. Type of work
- B. Educational training
  - 1. High school
  - 2. Post high school
- C. Financing needed to enter
- D. Means of getting the job
- E. Entry level requirements
- F. Advancement possibilities
- G. Licensing or certification
- H. Working conditions
- I. Health and physical requirements
- J. Earnings and benefits
- K. Future outlook

X. Occupations related to agri-business

(NOTE: The following list of occupations that are related to agri-business in Kansas were identified and taken from a study conducted by Jesse Mitchell. The occupations are listed in order of importance as far as job possibilities.)

- A. Agricultural insurance, finance, real estate
- B. Agricultural supplies, services, and distribution

C. Agricultural building and construction

D. Food manufacturing, processing, service, and distribution

E. Feed and grain manufacturing, processing, and distribution

F. Livestock industry service and distribution

G. Ornamental horticulture and floriculture

H. Agricultural machinery and equipment

I. Forestry processing and distribution

J. Government services (ASCS, FHA, FLB, SCS)

K. Dairy manufacturing, processing, and distribution

L. Meat processing and distribution

M. Agricultural heavy machinery and equipment service and operation

N. Cotton manufacturing, processing, and distribution

O. Fruit and vegetable processing and distribution

P. Recreation and wildlife

Q. Veterinary supplies, services, and sales

R. Poultry processing, services, and distribution

S. Kennels, pets, supplies, and service

(NOTE: The instructor should refer to Mitchell's study for additional information concerning the number of employees needed in each occupation. If a copy of the study is needed, please write the Curriculum and Instructional Materials Center.)

XI. (NOTE: Net subprofessioanl manpower needs in Kansas 1978-1985. Not in order of importance. Job needs for Kansas are as follows:)

A. Farm & Farm Workers - 5775

B. Agriculture Mechanics - *

C. Related Mechanics - *

D. Ground Keepers and Nursery Workers - *

E. Agriculture Sales Workers - *

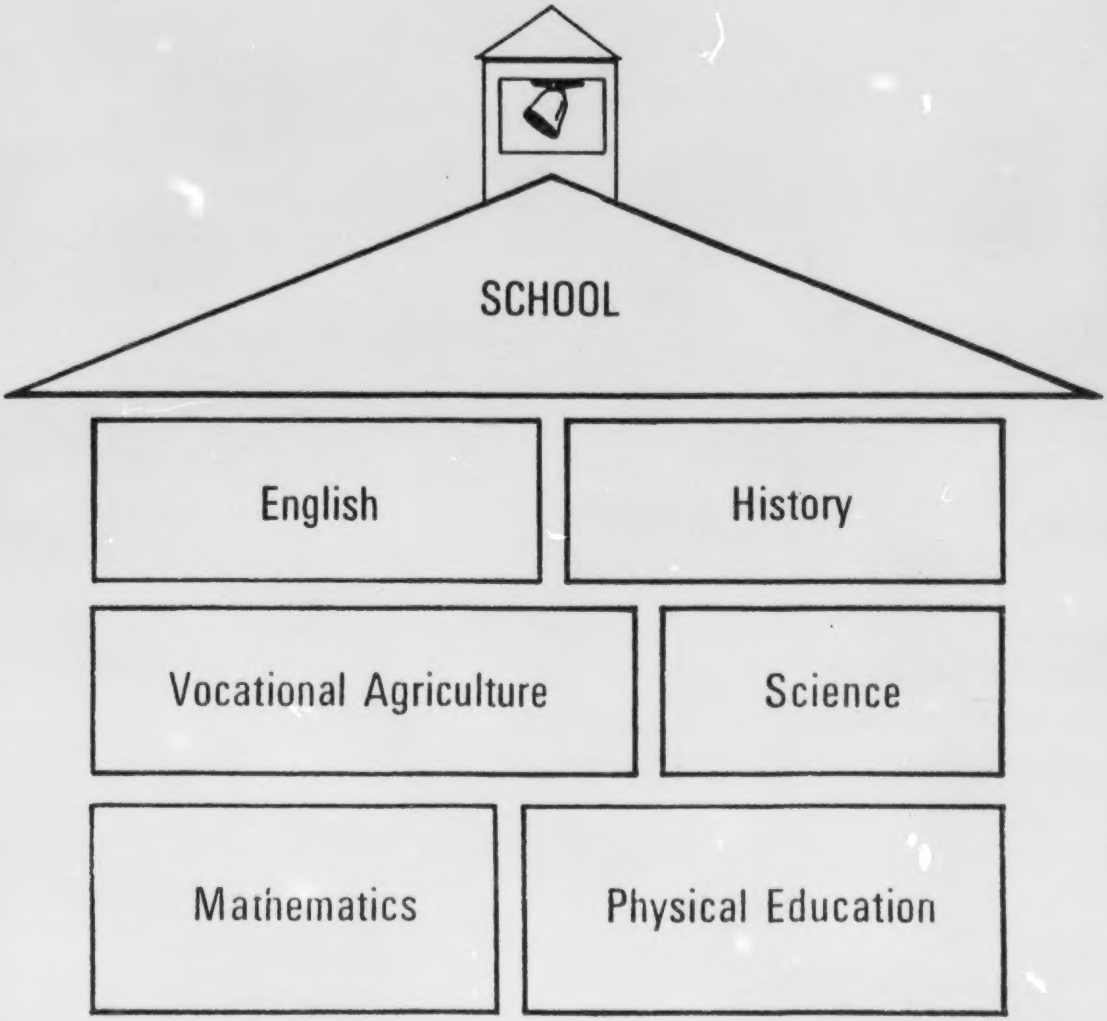
F. Agriculture Service Workers - *

G. Agriculture Processing Workers - *

H. Workers in Conservation and Management of Natural Resources - *

(NOTE: *State data not available)

Part of a Complete Program



SCHOOL

English

History

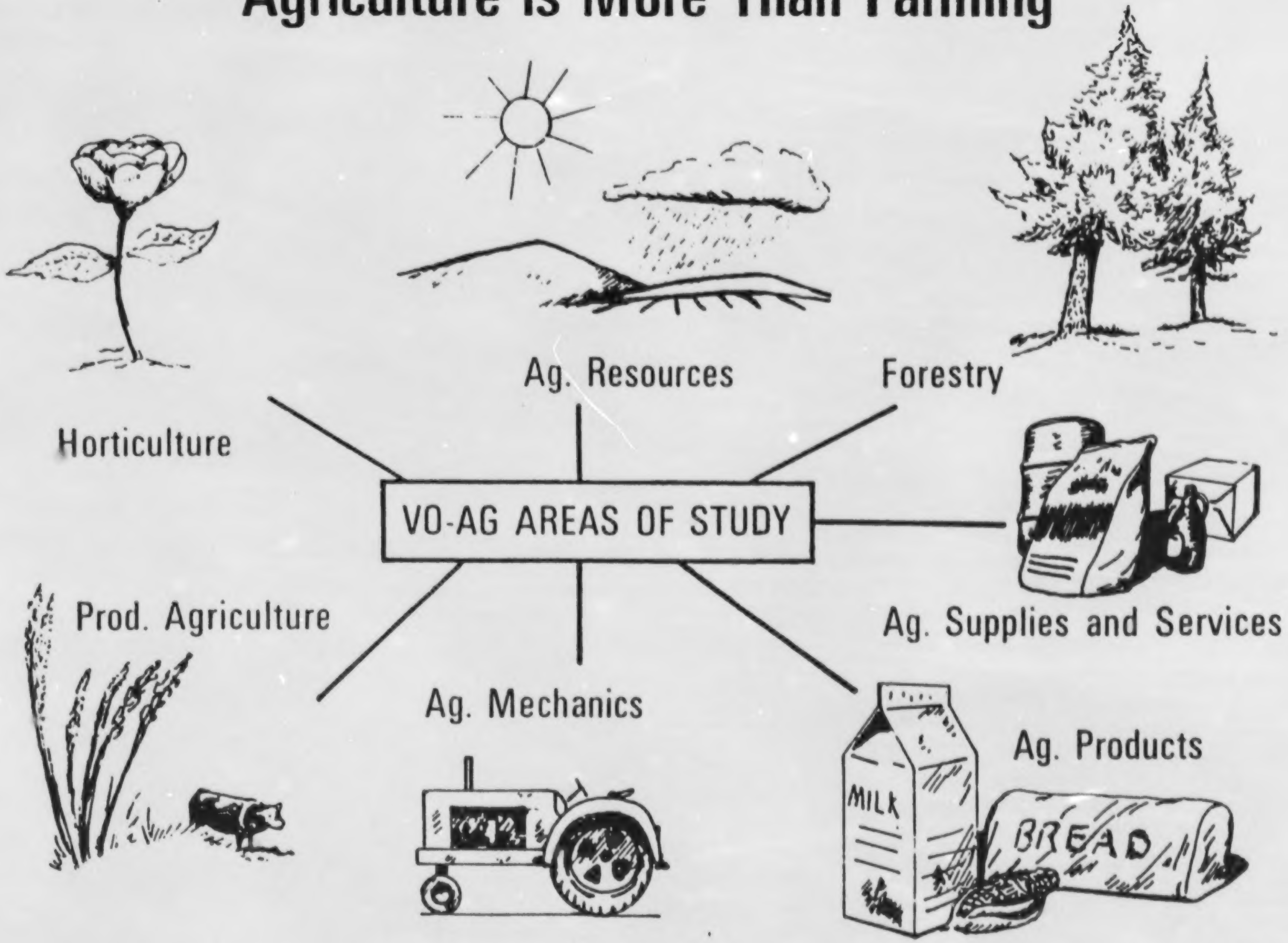
Vocational Agriculture

Science

Mathematics

Physical Education

Agriculture is More Than Farming



VO-AG AREAS OF STUDY

Horticulture

Ag. Resources

Forestry

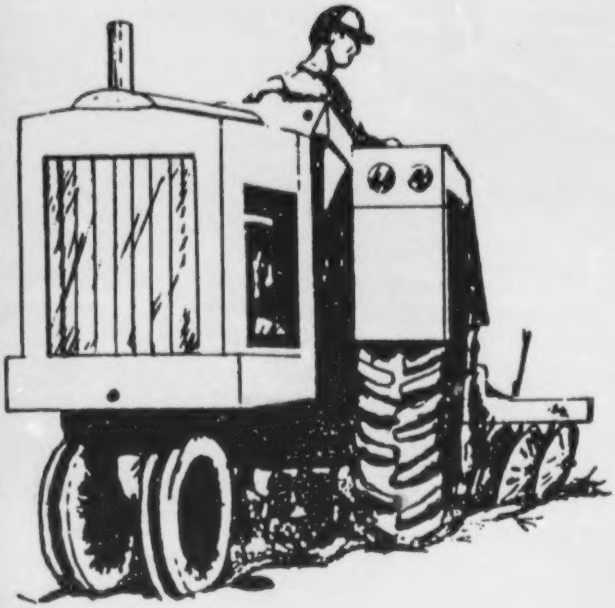
Ag. Supplies and Services

Ag. Products

Ag. Mechanics

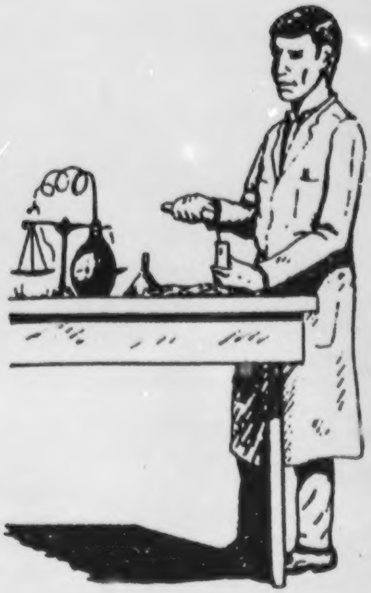
Prod. Agriculture

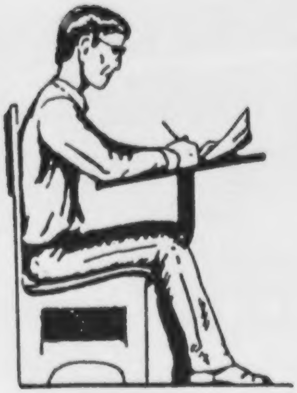
Three-Way Instruction



On The Job

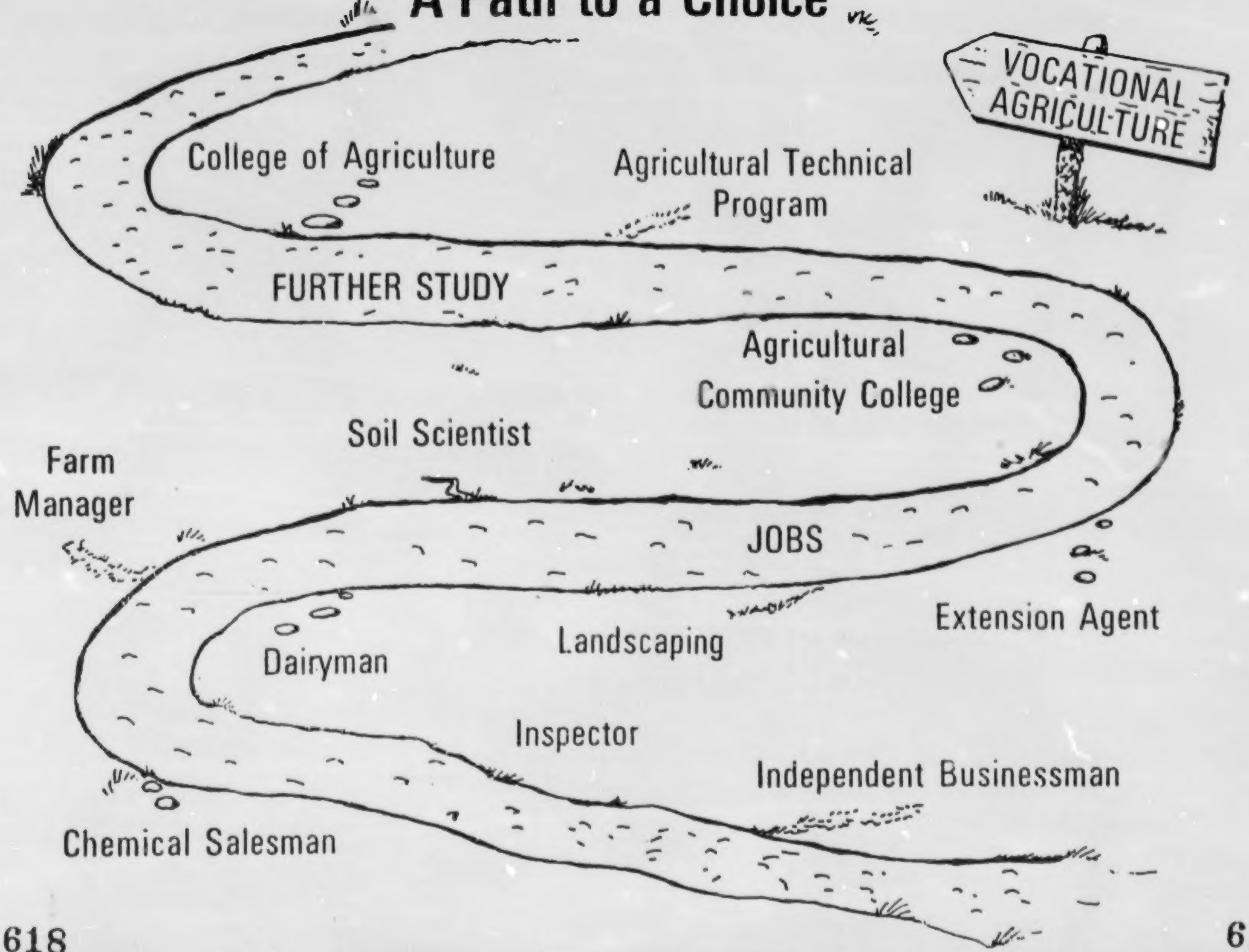
In The Laboratories



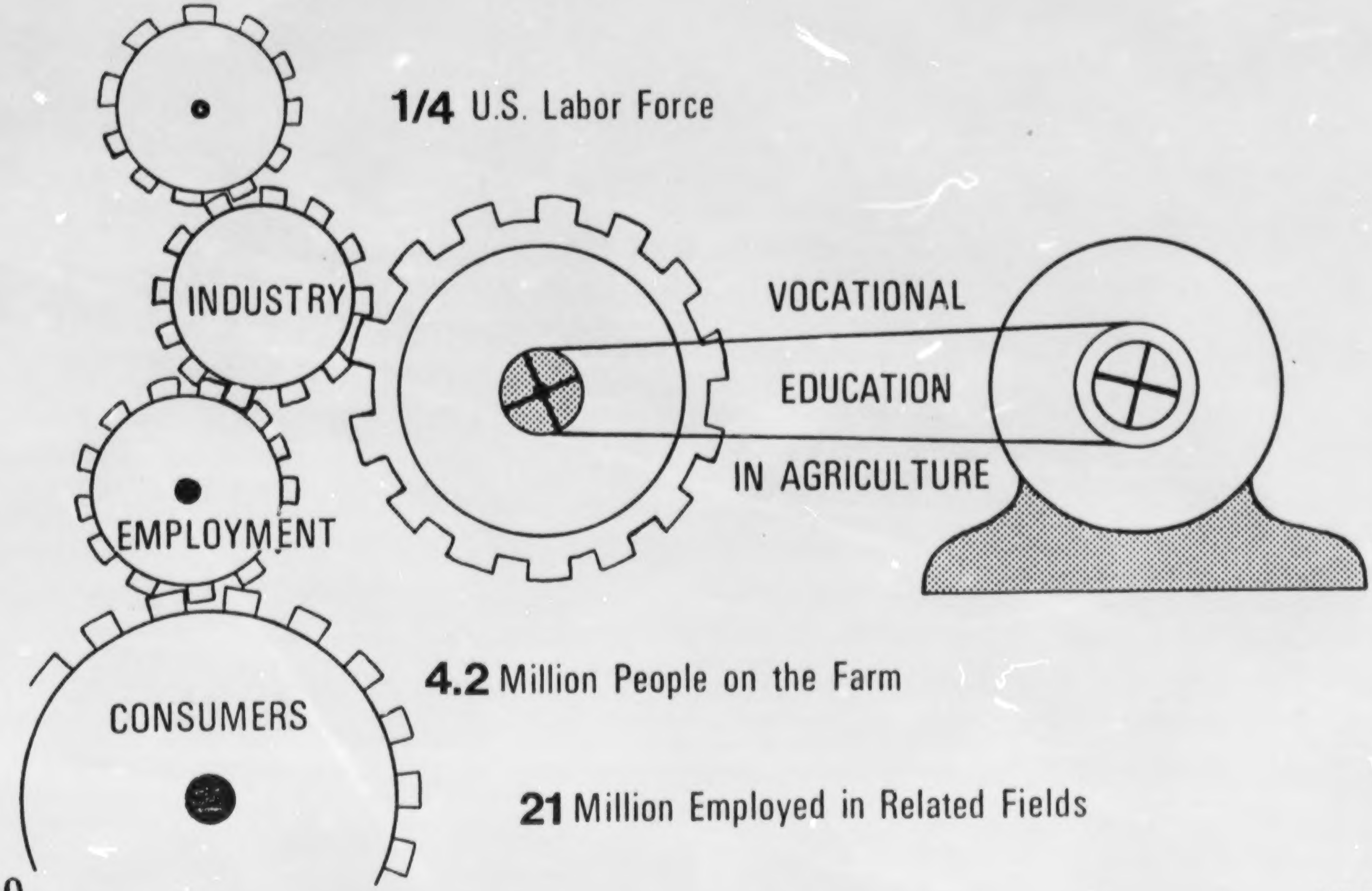


In The Classroom

A Path to a Choice


VOCATIONAL AGRICULTURE
College of Agriculture
Agricultural Technical Program
FURTHER STUDY
Agricultural Community College
Soil Scientist
Farm Manager
JOBS
Extension Agent
Landscaping
Dairyman
Inspector
Independent Businessman
Chemical Salesman

A Large Segment in the World of Work


INDUSTRY
EMPLOYMENT
CONSUMERS
VOCATIONAL
EDUCATION
IN AGRICULTURE

1/4 U.S. Labor Force

4.2 Million People on the Farm

21 Million Employed in Related Fields

CAREER SELECTION
UNIT I

ASSIGNMENT SHEET #1 - Select and Collect Information on Careers

You are approaching the most important time in your life. This is the time when you must choose a career to pursue upon completion of your high school program. Much time, thought, and preparation should be given, because the career you are about to select will more than likely become the way of life for you. Select a career that you would like to pursue after graduation and collect as much information as possible about the career. Record the information in the space provided and when completed return to the instructor for his evaluation.

Career selected: ____

Level within the occupation: ______________________________________

What type of educational training is needed? ________________________

Does the career selected provide means for advancement? ______________

What type of working conditions does the career contain? ______________

What are the procedures for obtaining the job? ______________________

What are the expected earnings and benefits derived from the career previously selected?

Discuss in a short paragraph the reasons for making such a selection on the career choice.

Since you have conducted research on the career, has your attitude changed? If so, in what way? Discuss in a short paragraph.

CAREER SELECTION
UNIT I

ASSIGNMENT SHEET #2 - Visit a College Program and Identify Opportunities Offered Related to Agri-Business

Visit a junior college or an area Vocational-Technical School which is providing some type of training related to a career in agri-business. During your visit, collect as much information as possible and record it in the space provided. When completed return to the instructor for his evaluation.

School:______________________________ Location:__________________________

1. In what occupational areas is training being given and what is the length of the training?

   a.____

   b.____

   c.____

   d.____

2. What are the job opportunities in each area of training?

   a.____

   b.____

   c.____

   d.____

CAREER SELECTION
UNIT I

TEST

1. Match the terms on the right to the correct definition.

_____a. A piece of work which is rather specific and definite in nature

_____b. A process one goes through eliminating some occupations and retaining others until an occupation has been made

_____c. A group of related jobs in an area of work which constitutes the work a person does regularly to make a living

_____d. The industry covering the broad areas of agriculture from production, through supplying and servicing, business, finance, and all necessary functions of making agricultural commodities available to the consumer

_____e. The sequence of occupations in the life of an individual that makes up a career

_____f. A term referring to the inputs of producing food and fiber, including processing and marketing of food and fiber

_____g. A course of continued progress in the life work of a person or progress through life in a series of related occupations or activities

_____h. A publication that sets forth guidelines for programs under the Vocational Education Act of 1963

1. Agricultural industry
2. Agri-business
3. Agricultural Occupation
4. Career
5. Career pattern
6. Occupation
7. Occupational
8. Job

2. Name three main areas of vocational agriculture training as they relate to career selection.

a.

b.

c.

3. Name three reasons for choosing a career.

   a.

   b.

   c.

4. Name four ways in which the agriculture program you are now enrolled in will help you prepare for an occupation.

   a.

   b.

   c.

   d.

5. Discuss in a short paragraph the benefits of selecting a career involved in agriculture.

6. Name the eight occupational areas that are available in the field of agriculture.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

7. Name the eight levels of employment within the occupational areas.

   a.

   b.

   c.

   d.

   e.

   f.

   g.

   h.

8. Name three sources of information on agricultural careers.
   - a.
   - b.
   - c.

9. Name four important factors to consider when selecting a career.
   - a.
   - b.
   - c.
   - d.

10. From the list of occupations below select the top four occupations that are related to agri-business as far as job possibilities are concerned.

_____a. Livestock industry service and distribution

_____b. Agricultural supplies, services, and distribution

_____c. Meat processing and distribution

_____d. Agricultural machinery and equipment

_____e. Agricultural insurance, finance, real estate

_____f. Recreation and wildlife

_____g. Food manufacturing, processing, service, and distribution

_____h. Agricultural building and construction

11. Demonstrate the ability to:
    - a. Select and collect information on a career related to agriculture
    - b. Visit a college program to find the opportunities that are available in agriculture

CAREER SELECTION
UNIT I

ANSWERS TO TEST

1. _8_ a.

   _7_ b.

   _6_ c.

   _1_ d.

   _5_ e.

   _2_ f.

   _4_ g.

   _3_ h.

2. Any three of the following:
   a. Production Agriculture
   b. Agricultural Supplies/Services
   c. Agricultural Mechanics
   d. Horticulture
   e. Renewable Natural Resources

3. Any three of the following:
   a. Happiness and satisfaction
   b. Opportunities for promotion and advancement
   c. Financial and fringe benefits
   d. Selection of people to work with

4. Any four of the following:
   a. Aids student in becoming established in agriculture
   b. Co-op experience programs prepare for agricultural occupations

c. Production and improvement projects and in occupational choice
d. School farm aids in occupational choice
e. Studying livestock and crop production helps identify occupations
f. Farm management helps with occupational choice
g. FFA activities teach many important aspects of occupational training

5. The discussion should be to the satisfaction of the instructor and should mention the importance of agriculture to national employment.

6. a. Agri-business
   b. Communications
   c. Education
   d. Industry
   e. Research
   f. Conservation
   g. Services
   h. Farming ranching
   i. Horticulture

7. Any eight of the following:
   a. Professional
   b. Technical
   c. Managerial
   d. Supervisory
   e. Sales
   f. Office
   g. Skilled
   h. Semi-skilled
   i. Unskilled

8. Any three of the following:
   a. Vocational agriculture instuctor
   b. Guidance counselor
   c. Agricultural industries
   d. U.S.D.A. offices

- e. Junior colleges
- f. Area vocational-technical schools
- g. Kansas State University

9. Any four of the following:
   - a. Type of work
   - b. Educational training
   - c. Financing needed to enter
   - d. Means of getting the job
   - e. Entry level requirements
   - f. Advancement possibilities
   - g. Licensing or certification
   - h. Working conditions
   - i. Health and physical requirements
   - j. Earnings and benefits
   - k. Future outlook

10. B, E, G, H

11. Performance skills will be evaluated by the instructor.

CUSTOMER RELATIONS

TERMINAL OBJECTIVES

After completion of this unit, the student should be able to demonstrate effective personality, physical, and vocal traits. The student should also be able to list the primary purposes of essential verbal language skills, distinguish between good and bad approaches, and demonstrate how to deal with different types of customers. This knowledge will be evidenced through demonstrations, various activities, and by scoring eighty-five percent on the unit test.

SPECIFIC OBJECTIVES

After completion of this unit, the student should be able to:

1. Select from a list the personal characteristics of a salesperson.
2. Distinguish between good and poor posture.
3. Complete a self analysis on the essentials for good grooming.
4. Complete a self evaluation of wardrobe habits.
5. Complete a self check on gestures.
6. List the five principles of effective speaking.
7. Complete a voice analysis self evaluation.
8. Complete speech analysis for pronunication and enunciation.
9. List the three types of sales approaches.
10. List three purposes of an approach.
11. Select from a list, rules of a good approach.
12. Select from a list favorable results of a planned approach.
13. Match the ten types of customers with the ways in which to handle them.
14. List four types of services a retail store might offer.
15. Select from a list good rules for handling complaints.
16. List the four points of explaining delays of ordered goods.
17. List the two ways in which to handle orders a salesperson cannot fill.

CUSTOMER RELATIONS

SUGGESTED ACTIVITIES

I. Instructor

   A. Provide student with objective sheet

   B. Provide student with information, assignment, and supplemental information sheets

   C. Discuss unit and specific objectives

   D. Discuss information, assignment, and supplemental information sheets

   E. Discuss transparencies

   F. Have students visit local retail stores and observe a salesperson's approach and customer reaction

   G. Role play. Have a student act out one type of customer and have another student act as the salesperson. See how well the salesperson can adjust his/her presentation to each type of customer.

   H. Have a well trained salesperson come in to explain how he or she handles complaints and delay in orders

   I. Give test

II. Students

   A. Read objectives

   B. Study information sheets

   C. Complete assignment sheets

   D. Take test

INSTRUCTIONAL MATERIALS

I. Included in this unit:

   A. Objectives

   B. Information sheet

   C. Supplemental information sheet

   D. Transparency masters

      TM 1 - How Some Salespeople Look. . .To a Cartoonist
      TM 2 - How Some Customers Look
      TM 3 - How Some Customers Look-continued
      TM 4 - How Some Customers Look-continued

E. Assignment sheets

   #1 - Essentials for Good Grooming
   #2 - Evaluation of Wardrobe
   #3 - Gestures Build Sales Resistance
   #4 - Voice Analysis
   #5 - Speech Analysis for Pronunciation and Enunciation
   #6 - The Approach
   #7 - When a Salesperson Cannot Fill an Order

F. Test

G. Answers to test

II. References:

A. Cooperative Vocational Education, State Department of Vocational and Technical Education, Stillwater, Oklahoma, c. 1972.

B. Distributive Education - Curriculum Guide - Dallas Independent School District, Dallas, Texas, c. 1966.

C. Distributive Education - DE-1 Course of Study, Curriculum and Instructional Materials Center, Stillwater, Oklahoma, c. 1973.

D. Fashion Merchandising Vocational Education, Curriculum and Instructional Materials Center, State Department of Vocational and Technical Education, Stillwater, Oklahoma 74074.

CUSTOMER RELATIONS

INFORMATION SHEET

I. Personal characteristics of a salesperson (Transparency 1)

A. Alertness - If you are on your toes, you can better interpret the customer's mood, actions, words, and expressions.

B. Courtesy - Is an important factor in that it shows you care and honor your customers as guests.

C. Enthusiasm - If you are enthusiastic about your store, your job, your merchandise, the customer will think you are better willing to serve them.

D. Expedient - Gives you the ability to quickly react to a particular situation or problem without hesitation.

E. Friendliness - If you display a friendly attitude from the beginning to the end of the business transaction, you put the customer in a buying mood.

F. Ingenuity - The ability to cleverly find new uses of the products you sell.

G. Self Confidence - Customers like to meet a salesperson who is sure of himself/herself and who seems to know what he or she is talking about. The customers will have faith in you as well as the products you sell.

H. Sincerity - Helps establish mutual trust that brings people back to the store.

I. Tact - Is the ability to do and say the right things in order to maintain good relationships with other people.

II. Posture

A. Good posture gives the impression of confidence and success.

B. Poor posture gives the impression of slouchy and awkward.

C. Stand erect with body well balanced on the feet.

III. Grooming

Refer to Assignment Sheet #1 - Essentials for Good Grooming

(NOTE: Customers have a natural aversion to buying from a person who has dirty, unclean face, discolored teeth, a noticeable body odor, or bad breath.)

IV. Wardrobe

Refer to Assignment Sheet #2 - Evaluation of Wardrobe Habits for Men/Women

(NOTE: Clothes should be worn that are conservative and appropriate for the job, in good repair, and that are clean and well pressed.)

V. Gestures

Refer to Assignment Sheet #3 - Gestures Build Sales Resistance

VI. Principles of effective speaking

A. Speak distinctly and clearly

B. Speak in an easy, friendly, coversational manner

C. Vary the pitch and tone of the voice

D. Emphasize key words and phrases

E. Speak with sincerity and honesty

VII. Voice analysis

Refer to Assignment Sheet #4 - Voice Analysis

VIII. Pronunciation and enunciation

Refer to Assignment Sheet #5 - Speech Analysis for Pronunciation and Enunciation

IX. Types of sales approaches

A. Greeting or personal

1. Makes customer feel important
2. Uses the customer's name
3. Example: "Good morning, Mr. Doe."

B. Merchandise

1. Used when customer is already looking at the merchandise
2. Describes the product
3. Most profitable in terms of sale
4. May be used to open the sale

C. Service

1. Offer assistance to the customer
2. Will always direct the customer's attention to his needs and wants
3. Is used if the customer is not looking at merchandise
4. Customer and item desired are unknown to the salesperson
5. Customer waits for salesperson to approach
6. Example: "Good morning, have you found what you are looking for?"

X. Purpose of the approach

A. Welcomes the customer into the store and makes them feel at ease

B. Makes a favorable impression on the customer towards the salesperson and the store

C. To find out the type of merchandise in which the customer is interested

D. To study the customer

E. Builds customer confidence in the salesperson

F. Starts the selling process

XI. Rules for good approach

A. Show the customer you desire to help by approaching him/her as soon as he/she enters the store

B. Be alert. The customer should not have to approach you for help

C. If there are more customers than salespeople wait on the customers in order of their arrival, but do not let the other customers wait long. Even though you are busy, acknowledge those customers that come in either by a smile or by saying, "I will be with you in a moment."

D. Never keep a customer waiting because you want to finish a conversation with another salesperson.

E. The usuage of "madam", "Lady", "mister" is not good

F. Word your greeting in such a way that the customer will not have a chance to say "no" such as "What may I show you?"

G. Cultivate the same attitude toward the customer as toward a guest in your home

H. Look directly at the customer to show you are interested in their wants and needs

I. Do not have a superficial, bored, or sarcastic smile

J. Never look preoccupied

Refer to Assignment Sheet #6 - The Approach

XII. Results of a favorable and planned approach

A. Shortens the distance between the salesperson and the customer

B. Puts the customer in a "yes" response mood

C. Shortens the time involved in making the sale

D. Establishes a relationship that may lead to a permanent addition to your company's business

XIII. Types of customers and how to handle them (Transparencies 2, 3, & 4)

A. Talkative Customer - Try to direct his/her interest in the sell as soon as possible.

B. Silent Customer - Make them feel comfortable and at ease by asking their opinions during the sales presentation.

C. Procrastinating Customer - For this type of customer, know your products well and be able to handle all of his/her objections.

D. Disagreeable Customer - In order to handle this customer, it takes a certain amount of self discipline. Don't lose your temper and above all be patient.

E. Impulsive Customer - This customer acts on impulse, so don't delay closing the sale with unnecessary details.

F. Opinionated Customer - This customer is the know it all, therefore, the salesperson should ask for his/her opinions during the sales presentation. Try not to oppose his opinions or be defensive of your own.

G. Suspicious Customer - Be honest and sincere with this type of customer. A demonstration showing the product's limitations would be effective.

H. Shrewd Customer - Compliment this type of customer on their careful examination or opinions of your products.

I. Decisive Customer - The more distinct your sales presentation and the quicker you present, the more successful you will be in handling this type of customer.

J. Timid Customer - You must take the initiative to direct this customer in each step of the buying process.

(NOTE: Not all people fit exactly under each category. They may be a combination of one or more types. The salesperson must therefore be able to adjust himself/herself to such changes in disposition and always maintain a sincere attitude of trying to be of service.)

XIV. Services a retail store might offer (See Supplemental Information Sheet #1)

A. Delivery service

B. Credit service

C. Installation and maintenance

D. Returns and adjustments

E. Community services

   1. Rotary Club

   2. Kiwani's Club

   3. Lion's Club

F. Miscellaneous services

1. Public telephone
2. Restrooms and lounges
3. Free parking

(NOTE: In order to extend good will to its customers, many retail stores have a variety of services they may offer. It is your job as a salesperson to know and inform your customers of these services.)

XV. Rules for handling complaints

A. Hear the customers side of the story first.

B. Get the facts

C. If it is your fault and you know it, admit the error immediately

D. Never lose your own temper

E. Do not delay in handling complaints

XVI. Explaining delays of ordered goods

A. Determine the reason for the delay

B. Apologize and explain delays to the customer as quickly as possible

C. Attempt to help the customer out of any tight spots the delay might have caused

D. Take immediate steps to prevent recurrences of the delay

XVII. How to handle orders a salesperson cannot fill

A. Try to sell the customer something of equivalent use without pressuring them

B. Help the customer place their order elsewhere

Refer to Assignment Sheet #7 - When a Salesperson Cannot Fill an Order

CUSTOMER RELATIONS

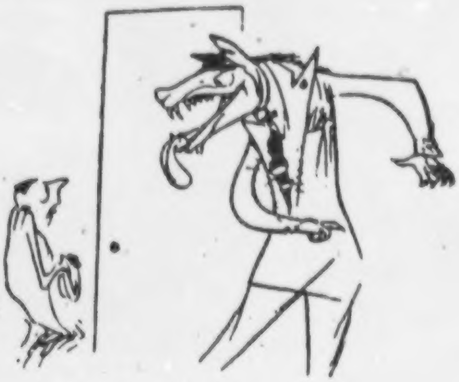
GENERAL SALES & SERVICE POLICIES

1. The customer is always right if he/she thinks he/she is right.
2. Be more interested in pleasing a customer than in making a sale.
3. Every sale of merchandise or service includes the obligation to accept the article for credit, refund, exchange, or adjustment promptly and courteously to the customer's satisfaction.
4. Never exaggerate about the quality of merchandise verbally or in print.
5. Customers must be considered and treated as guests as well as patrons.
6. Strive to give completely satisfactory service to every customer.

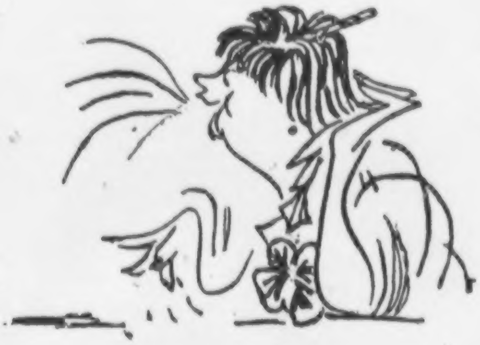
HOW SOME SALESPEOPLE LOOK...

TO A CARTOONIST

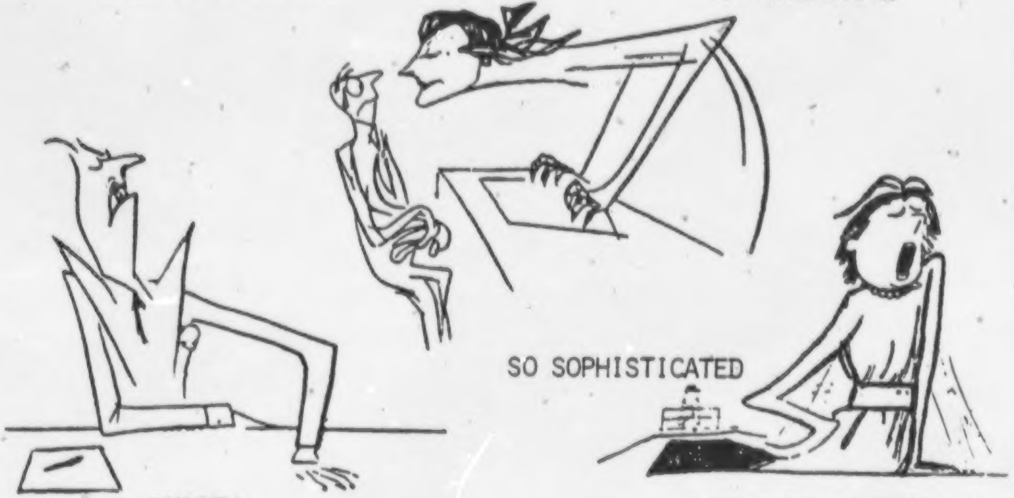
FAMED FOR HIS NEEDLE-SHARP PORTRAYALS OF THE WAY SOME PEOPLE ACT, CARTOONIST ROBERT C. OSBORN WAS ASKED RECENTLY BY THE PARKER REN CO. TO REPORT ON THE FOIBLES OF TODAY'S RETAIL SALESPEOPLE. AFTER A LITTLE FIELD WORK, MR. OSBORN CAME UP WITH THESE FINDINGS:



OVER-AGGRESSIVE



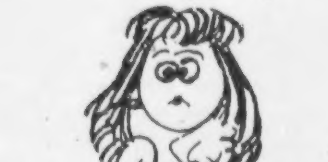
TOO TALKATIVE



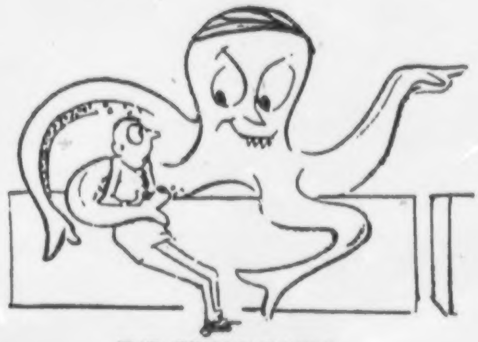
SO SOPHISTICATED

SNOOTY

CHRONICALLY BORED

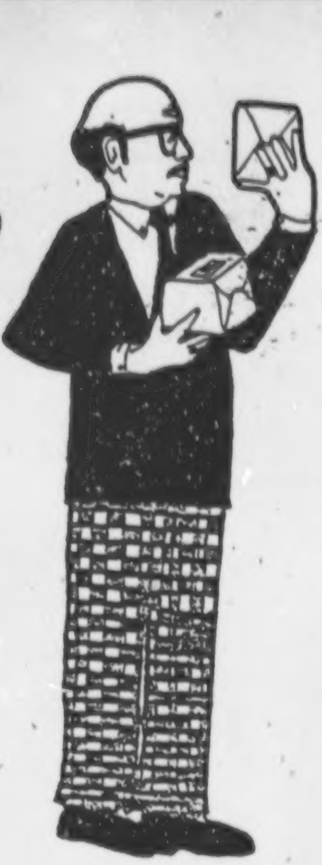


FLUSTERED

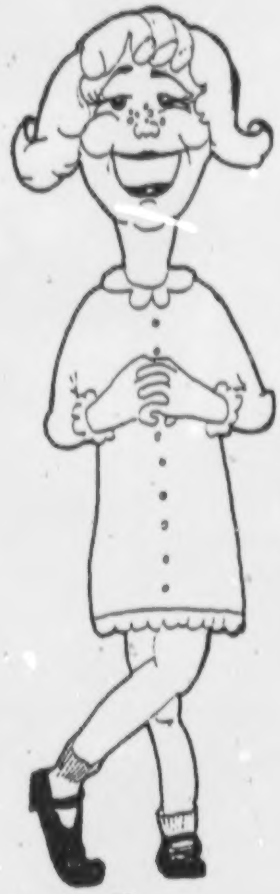


THE PRESSURIZER

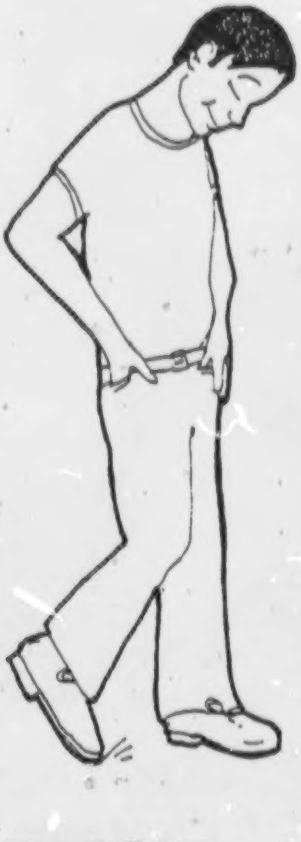
HOW SOME CUSTOMERS LOOK



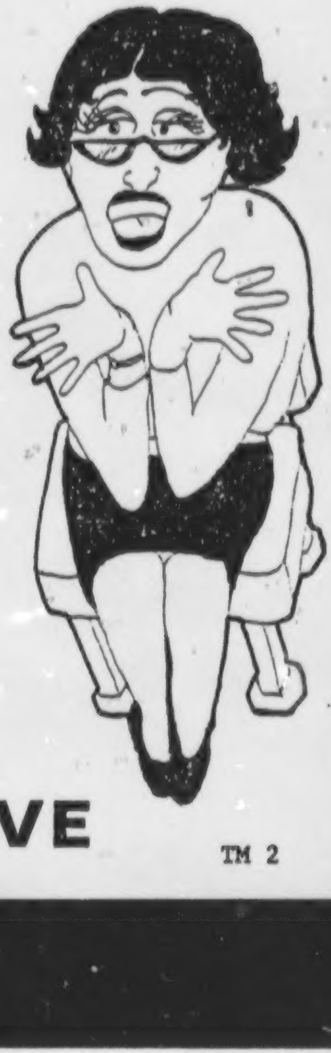
SHREWD



TALKATIVE

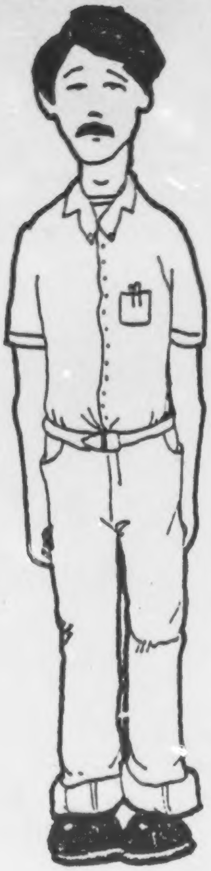


TIMID

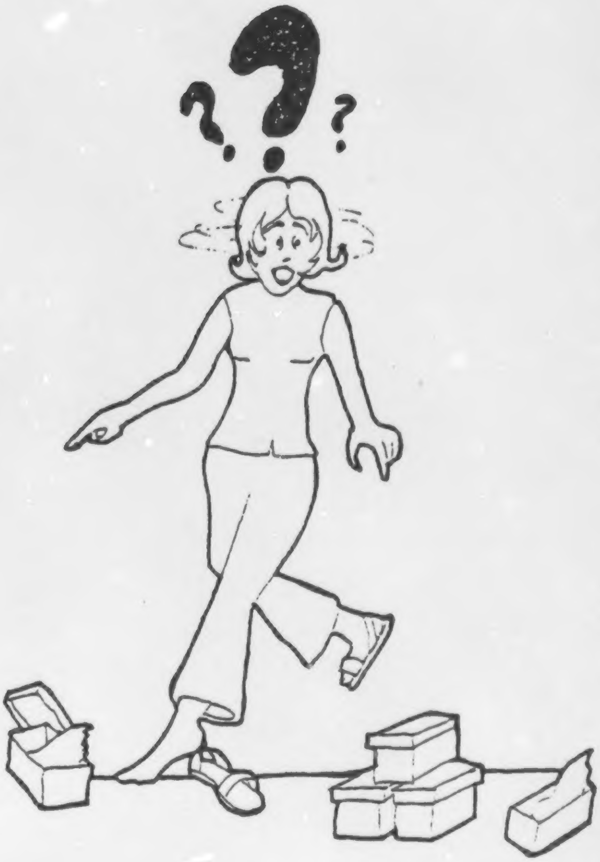


DECISIVE

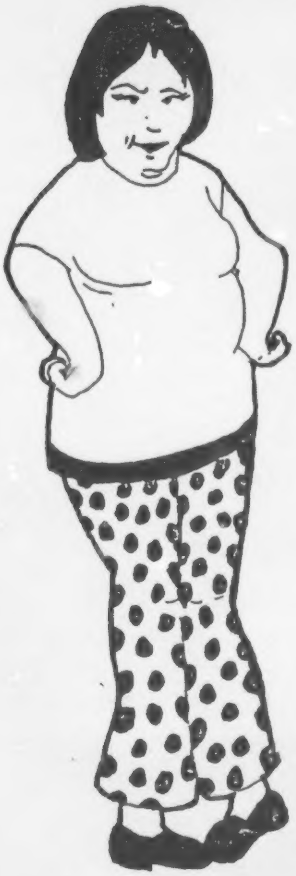
TM 2



SILENT

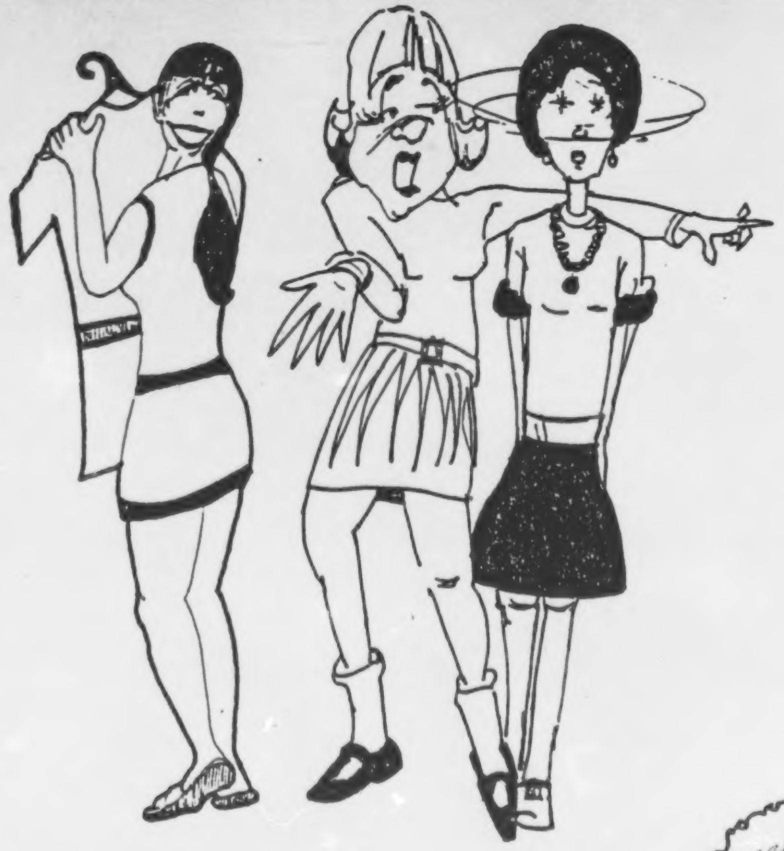


PROCRASTINATING

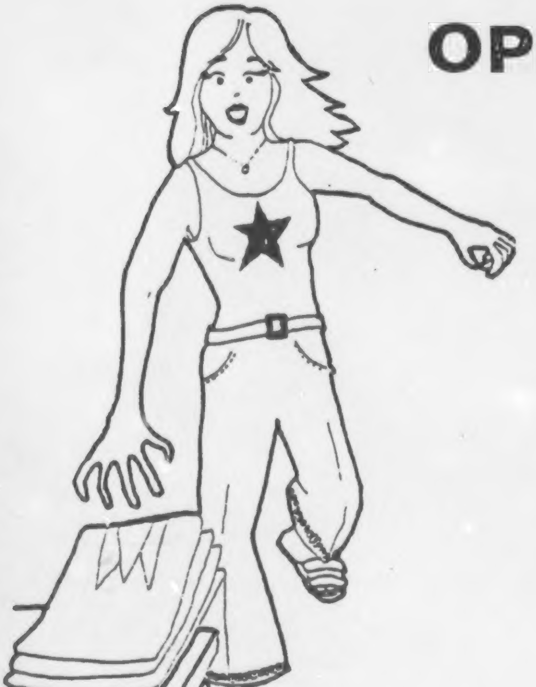


SUSPICIOUS

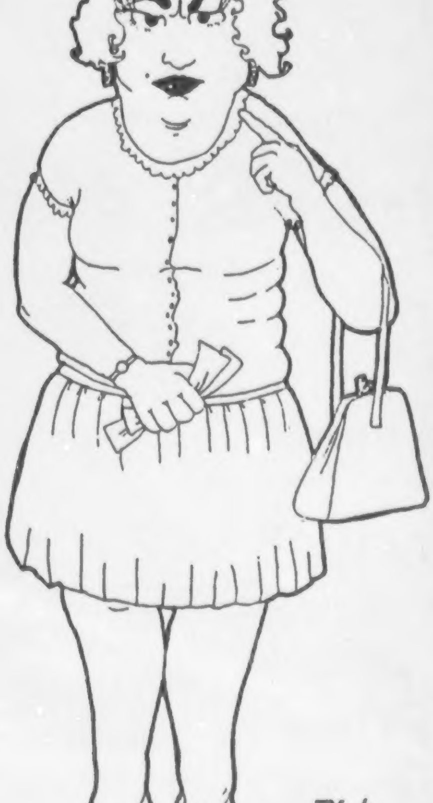
TM 3



OPINIONATED



IMPULSIVE



TM 4

DISAGREEABLE

CUSTOMER RELATIONS

ASSIGNMENT SHEET #1 - ESSENTIALS FOR GOOD GROOMING

Rate yourself on each of the following questions. Use a scale of 6-always, 4-usually, 2-occasionally, and 0-never. When you have completed the evaluation, total your score and compare it to the rating scale provided.

_____ 1. Do you take a bath or shower daily?

_____ 2. Do you use an effective deodorant or anti-perspirant daily?

_____ 3. Do you use a foot spray or powder daily?

_____ 4. Do you shave as often as needed?

_____ 5. Do you put on clean undergarments daily?

_____ 6. Do you put on clean hosiery or socks daily?

_____ 7. Do you wash your face thoroughly at least twice daily?

_____ 8. Do you push cuticles back as you dry hands and feet after bathing?

_____ 9. Do you use handcream daily?

_____10. Do you check fingernails daily and repair as necessary?

_____11. Do you wash your hair twice a week?

_____12. Do you brush your hair vigorously every day?

_____13. Do you have a haircut or trim regularly?

_____14. Do you use a dandruff shampoo or cream rinse and conditioner if needed?

_____15. Do you brush your teeth at least twice daily?

_____16. Do you use a mouth wash daily?

_____17. Do you get enough sleep and rest so that you feel refreshed?

_____18. Do you take a good look at yourself in a full length mirror before leaving the house?

_____19. Do you have good posture?

_______ Total

Rating Scale:

100 - 114	You take pride in your appearance
85 - 99	You'd probably pass inspection
70 - 84	You're not really trying
Below 70	Your best friend won't even tell you

ASSIGNMENT SHEET #2 - EVALUATION OF WARDROBE HABITS FOR MEN

Is your grooming up to business standards? Rate yourself on the following items. Give yourself 4-always, 2-sometimes, and 0-never. When you complete the form, total your score and compare your rating with the rating scale provided.

_____ 1. Are your clothes pressed, and are the pants well creased?

_____ 2. Is your clothing free from stains or spots?

_____ 3. Do you wear a fresh shirt daily?

_____ 4. Do you put on clean socks and underwear daily?

_____ 5. Does your tie harmonize with your shirt and suit, if you wear one?

_____ 6. Are your socks smooth and free from wrinkles at the ankles?

_____ 7. Do you avoid wearing white socks with dark pants?

_____ 8. Are your socks long enough to avoid exposing bare skin when you sit?

_____ 9. Are your shoes shined and in good repair?

_____10. Do you wear a deodorant or anti-perspirant to protect you?

_____11. Do your shoes harmonize with your clothing?

_____12. Do you carry a clean hankerchief?

_____13. Is your tie neatly knotted?

_____14. Are your clothes conservative and businesslike?

_____15. Do you have nonwashable items cleaned often?

_____16. Do you check clothes for soiled spots, missing buttons, or spilt seams before wearing?

_______ TOTAL

Rating Scale

60 - 68	You meet business standards.
50 - 59	Employer may grudgingly tolerate you,
Below 50	Better get to work ! You'll never get a promotion that way.

ASSIGNMENT SHEET #2 - EVALUATION OF WARDROBE HABITS FOR WOMEN

Is your grooming up to business standards? Rate yourself on the following items. Give yourself 4-always, 2-sometimes, and 0-never. When you complete the form, total your score and compare your rating with the rating scale provided.

_____ 1. Does your outfit coordinate with your hair, eyes, and complexion?

_____ 2. Are your clothes spotlessly clean and pressed?

_____ 3. Do your clothes coordinate attractively?

_____ 4. Do you check your garments for split seams, ripped hems, or loose buttons before wearing?

_____ 5. Do you protect clothing from perspiration stains?

_____ 6. Do you have nonwashable garments cleaned often?

_____ 7. Do you wash undergarments and hosiery after each wearing?

_____ 8. Do you check hosiery for runs and snags before wearing?

_____ 9. Do you keep shoes brushed, polished, and in good repair?

_____10. Do you avoid lounging at home in your work clothes?

_____11. Do you protect dress with a makeup cape when applying cosmetics or combing your hair?

_____12. Do you wear a good bra?

_____13. Do you wear a gridle?

_____14. Do you clean out your handbag often to get rid of unnecessary items?

_____15. Do you avoid wearing loud dangling bracelets or exotic jewelry to the office?

_____16. Do your shoes and accessories coordinate with your clothing?

_____17. Do you wear shoes with good support and comfortable heels when you must stand for long periods of time?

_____ TOTAL

Rating Scale

60 - 68	You meet business standards.
50 - 59	Employer may grudgingly tolerate you.
Below 50	Better get to work ! You'll never get a promotion that way.

CUSTOMER RELATIONS

ASSIGNMENT SHEET #3 - GESTURES BUILD SALES RESISTANCE

Dr. James F. Bender, New York psychologist, listed 25 most annoying autistic gestures, in the order reported by 50 buyers to whom one hundred such mannerisms were submitted. Comment: Salesmen guilty of any one of the gestures listed are also, as a rule, guilty of other distracting faults, and are aware of none of them. Daily practice serves to perfect the ability to make a fault outstanding. If you have faults which seem themselves to work automatically during a sales interview, you are stumbling over hurdels plainly visible to your prospect, despite their invisibility to you. Make a mental check to see if you do any of the following:

1. Continuous blinking of the eyelids
2. Nose-picking
3. Twitching the brows
4. Cracking of the knuckles
5. Biting the lips
6. Scratching the head
7. Shrugging the shoulders
8. Smacking the lips
9. Protruding the tongue
10. Licking the lips
11. Jerking the lips
12. Pulling the ear
13. Tapping the floor with the foot
14. Swinging a crossed leg
15. Corrugating the eyebrow
16. Twiddling the thumbs
17. Finger tapping
18. Stroking the chin
19. Lacing and unlacing the fingers
20. Tugging the collar or tie
21. Pursing the lips
22. Moving the chair closer
23. Swaying the body while sitting or standing
24. Twitching the cheeks
25. Making the chin tremble

CUSTOMER RELATIONS

ASSIGNMENT SHEET #4 - VOICE ANALYSIS

Make a two-three minute tape recording of your voice. You may want to read an excerpt from a favorite book, tell a story, or talk on any subject that interests you.

Place an "X" in front of the items below which most nearly describes your voice in that aspect.

1. Pitch _____high _____medium _____low

2. Rate of speech _____fast _____medium _____slow

3. Volume _____loud _____medium _____soft

4. Tone Quality
   _____breathy _____shrill
   _____husky _____flat
   _____harsh _____normal
   _____nasal _____other, explain _____________

5. Clarity _____good _____fair _____poor

6. Vowel sounds _____clear ____fair _____poor

7. Consonants
   _____distinct
   _____indistinct
   _____slurred

8. Inflection (pitch change on a single syllable) _____good _____fair _____poor

9. Use of gestures
   _____smooth and integrated
   _____fast and jerked
   _____none used

10. Rate, Tone and Expression
    _____varried
    _____some variation
    _____no variation

ASSIGNMENT SHEET #5 - SPEECH ANALYSIS FOR PRONUNCIATION AND ENUNCIATION

Select a short paragraph from a favorite book or even a textbook and record your voice on a tape recorder. Replay the tape several times. Answer the following questions while listening to your voice. Have another classmate evaluate you at the same time. Use the following rating scale: 4-always, 3-usually, 2-seldom, 1-never.

	Your Rating	Classmate's Rating
1. Do you speak loudly enough to be heard easily?	______	______
2. Are you easily understood?	______	______
3. Do you pronounce your vowels clearly?	______	______
4. Do you pronounce consonants distinctly?	______	______
5. Do you complete word endings? ing's? r's? ly's?	______	______
6. Is your pitch pleasant to listen to?	______	______
7. Do you use proper pronunciation?	______	______
8. If you are not sure about proper pronunciation do you check with the dictionary?	______	______
9. Do you vary your rate, pitch and facial expression?	______	______
10. Did you breath and stand properly while talking?	______	______
TOTAL	______	______

Rating Scale:

37 - 40	You'd make the debate team
34 - 36	Good show
31 - 33	Could use improvement
30 or less	Practice reading aloud

CUSTOMER RELATIONS

ASSIGNMENT SHEET #6 - THE APPROACH

Some standard forms of approach are given below. Some of these approaches are good, some are poor, others are questionable. Since no one approach can suit all situations, it is difficult to say which may be the most satisfactory one to use. Keep in mind that you will have this problem to face in almost any kind of store.

Place a "G" before those you think are good, and a "P" before those you think are poor, and a zero before those that are questionable. After you have completed this assignment, discuss your answers.

_____ 1. Are you looking for something?

_____ 2. Is anyone helping you?

_____ 3. Good morning, Mrs. Riner, may I help you?

_____ 4. Are you being taken care of?

_____ 5. May I show you some of these nails?

_____ 6. May I help you?

_____ 7. Something for you?

_____ 8. Anything in particuluar you wanted?

_____ 9. Now dearie, what may I do for you?

_____10. Are you next, Mister?

_____11. What do you want?

_____12. Do you wish attention?

_____13. Something in insecticides?

_____14. One ninety-three.

_____15. Yes, Madam?

_____16. Are you looking, or do you wish to buy something?

_____17. Garden tools?

_____18. Can I tempt you with anything today?

_____19. That is $2.87. How do you like it?

_____20. Good morning.

_____21. This wheelbarrel is specially priced today.

_____22. This is a dandy value.

_____23. Sorghum today?

_____24. Do you want to buy some of them hammers?

_____25. Is someone waiting on you?

ASSIGNMENT SHEET #7 - WHEN A SALESPERSON CANNOT FILL AN ORDER

Visit two local retial stores and ask for a particular brand of some article that you know the store does not carry in stock. Be sure that the store carries other brands of the same type of article. Record your findings on what the salesperson said and did when you asked for the brand that was not carried.

Store #1 ______________________________
(name)

Response:

Store #2 ______________________________
(name)

Response:

CUSTOMER RELATIONS

TEST

1. Select from the following list the personal characteristics needed to extend good customer relations by placing an "X" in the correct space.

_____a. Enthusiastic
_____b. Unsure
_____c. Ingenuous
_____d. Sarcastic
_____e. Alert
_____f. Sincere
_____g. Expedient
_____h. Cruel
_____i. Tactless

2. Distinguish between good and poor posture by filling in the correct word in the blanks provided.

a. Good posture gives the impression of ______________________ and ___________________.

b. Poor posture gives the impression of ______________________ and ___________________.

3. Complete a self analysis on the essentials for good grooming if not previously completed.

4. Complete a self evaluation of wardrobe habits if not previously completed.

5. Complete a self check on gestures if not previously completed.

6. List the 5 principles of effective speaking.

a. _________________________
b. _________________________
c. _________________________
d. _________________________
e. _________________________

7. Complete the voice analysis self evaluation if not previously completed.

8. Complete the speech analysis for pronunciation and enunciation if not previously completed.

9. List the three types of sales approaches.

a.

b.

c.

10. List three purposes of an approach.

a.

b.

c.

11. Select the rules of a good approach by placing an "X" in the appropriate blanks.

_____a. Do not approach customer as soon as he or she enters the store

_____b. Be alert

_____c. Acknowledge customers by a smile if you are waiting on someone else

_____d. Always keep a customer waiting

_____e. Use Madam, Lady, or Mister for the personal effect

_____f. Word greeting so customer will not have a chance to say no

_____g. Treat your customers as a guest in your home

_____h. When talking, do not look directly at the customer. He/she may think you are pressuring him.

_____i. Look bored and sarcastic when possible

_____j. Never look pre-occupied

12. Select the favorable results of a planned approach by placing an "X" in the appropriate blanks.

_____a. Widens distance between salesperson and customer

_____b. Puts customer in "Yes" mood

_____c. Shortens time in making the sale

_____d. May establish a permanent relationship for company's business

13. Match the description of how to handle different types of customers (in the left hand column) with that type of customer (in the right hand column) and place the correct number in the blank provided.

_____a. Be honest and sincere about the limitations of the product.

_____b. Make this customer feel at ease by asking his/her opinions.

_____c. Don't delay closing the sale with unnecessary details.

_____d. Direct this customer in each step of the buying process.

_____e. Salesperson must be patient, maintain self discipline, and never lose his/her temper.

_____f. Direct his/her interest to the sales presentation as soon as possible.

_____g. Know your products well and be able to handle all objections.

_____h. Give the sales presentation as distinct and quickly as possible.

_____i. Compliment this customer on their careful examination or opinions of your product.

_____j. Ask for his/her opinions but try not to oppose his/her opinions or be defensive of your own.

1. Decisive
2. Disagreeable
3. Impulsive
4. Opinionated
5. Procrastinating
6. Shrewd
7. Silent
8. Suspicious
9. Talkative
10. Timid

14. List four types of services a retail store may offer.

a.

b.

c.

d.

15. Select from the following list good rules for handling complaints by marking an "X" in the blank provided.

_____a. Always put off dealing with complaints

_____b. Let customer tell his side of the story first

_____c. Never lose your temper

_____d. Never admit you're wrong

_____e. Get all the facts

16. List the four points of explaining delays of ordered goods.

a.

b.

c.

d.

17. List two ways in which to handle orders a salesperson cannot fill.

a.

b.

CUSTOMER RELATIONS

ANSWERS TO TEST

1. a,c,e,f,g
2. a. Confidence, Success
   b. Slouchy, Awkward
3. Evaluated to the satisfaction of the instructor
4. Evaluated to the satisfaction of the instructor
5. Evaluated to the satisfaction of the instructor
6. a. Speak distinctly and clearly
   b. Speak in an easy, friendly, coversational manner
   c. Vary the pitch and tone of the voice
   d. Emphasize key words and phrases
   e. Speak with sincerity and honesty
7. Evaluated to the satisfaction of the instructor
8. Evaluated to the satisfaction of the instructor
9. a. Greeting or personal
   b. Merchandise
   c. Service
10. Any three of the following:
    a. Welcomes the customer and makes them feel at ease
    b. Makes a favorable impression
    c. Find out the type of merchandise a customer is interested in
    d. To study the customer
    e. Builds customer confidence
    f. Starts the selling process
11. b,c,f,g,j
12. b,c,d

13. a. 8
    b. 7
    c. 3
    d. 10
    e. 2
    f. 9
    g. 5
    h. 1
    i. 6
    j. 4

14. Any four of the following:
    a. Delivery service
    b. Credit service
    c. Installation and maintenance
    d. Returns and adjustments
    e. Community services
    f. Public telephones
    g. Restrooms and lounges
    h. Free parking

15. b,c,e

16. a. Determine reason for the delay
    b. Apologize and explain delays as quickly as possible
    c. Help customers out of a tight spot a delay might have caused
    c. Take immediate steps to prevent recurrences

17. a. Try to sell him/her an equivalent product without pressuring the customer
    b. Help him place his order elsewhere